



The Antiseptic

A Monthly Medical Journal.

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T. M. NAIR, M. D. (Edin.)

SUB-EDITOR:

G. RAMAN PILLAI, M.B. Ch. B. (Edin.)

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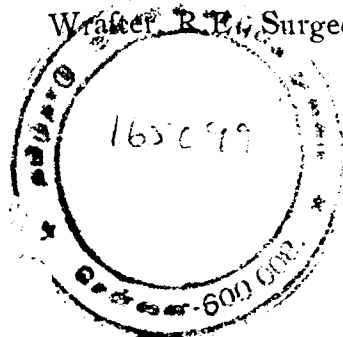
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List of Contributors to "The Antiseptic."

— — —
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Chandra, J.L., L.M.S.
Dawson, J. Bernard, M.B., B.S., F.R.C.S.
Davidson, J., M. D. (Edin.)
Davasikhamani, John.
Edwards, A.D., M.B., B.S. (Lond.), B.Sc., D.P.H.
Guru Rau, M.
Hughes, E. Lucas, L.R.C.P. (Lond.), M.R.C.S. (Eng.)
Jones, H. Emlyn, M.R.C.S. (Eng.), L.R.C.P. (Lond.)
Masilamani Mudaliar, A. M., L.M.S.
Morison, Rutherford, F.R.C.S.
Moodliar, N.V., L.M.S.
Ollerenshaw, J. Robert, M.D. (Vict.), F.R.C.S. (Eng.)
Pybus, F.C.M.A., M.B. (Dur.), F.R.C.S. (Eng.)
Ramachendra Aiyar, P.S.
Raman Pillai, G.M. B., Ch.B. (Edin.) [*Sub-Editor*]
Rama Rau, U
Sankaranarayanan, T.A., M.B. & C.M.
Short, A. Rendle, M.D.B.S., B.Sc. (Lond.), F.R.C.S. (Eng.)
Veeraraghavalu Naidu, M.J.
Wrafter, R. B., Surgeon-Major, B.M.S. (*Retd.*)



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Original Articles.

* PREGNANCY COMPLICATED BY ACUTE ABDOMINAL INFECTION.

BY

J. BERNARD DAWSON, M.B., B.S., F.R.C.S.

Late House Surgeon to St. Mark's Hospital for Diseases of the Rectum, London.



PREGNANCY, *per se*, does not predispose to any abdominal infection, but by the law of average such infection does occasionally occur in women who are impregnated.

Probably the commonest of these complications is the occurrence of appendicitis. Appendicitis, as a complication of pregnancy is to be regarded as extremely serious. The question of treatment is often one of great difficulty and anxiety.

How far the pregnancy may predispose towards the more acute condition it is not easy to say; it may be that the usual attendant constipation may accentuate or precipitate a slumbering recurrent appendicitis. On the other hand, the attack is often the first that the patient has had, and there is no previous history pointing to any abnormal condition of the appendix.

The effect upon the gestation is usually to terminate it, but it is possible, after operative interference upon the offending appendix, to ward off the threatened abortion.

The following instance will illustrate such a case:—

A girl aged 18 had an attack of acute appendicitis which terminated satisfactorily after 7 weeks' medical treatment and without operation.

* Specially contributed to *The Antiseptic*.

The patient suffered from habitual constipation which was somewhat accentuated after the attack. One year later she married and became pregnant within 2 months.

During the 4th month of her gestation, she was again seized with the signs and symptoms of appendicitis. After expectant treatment extended over 5 days, the signs of abscess formation became evident.

After due consultation it was decided to operate, and two ounces of pus was evacuated in the usual way, a small drainage tube being left to drain the cavity. After satisfactory progress for 48 hours uterine contractions began, which 12 hours later were associated with some loss of blood from the uterine cavity. An abortion seemed inevitable, and the patient was suffering severely. The somewhat heroic exhibition of Morphia was determined upon, and that together with Bromide of Potassium were given by mouth and subcutaneously. After several days of great anxiety the patient's condition improved and the uterine contractions ceased. The wound healed rapidly and, save for a slight return of uterine contractions which subsided under Morphia, nothing untoward happened.

The pregnancy terminated naturally at the end of the 8th month, and the child was healthy and vigorous.

There was some subsequent trouble from a slight hernia through the scar.

This case is to be regarded as a particularly happy one, since the mother was relieved of her abdominal infection, and was also enabled to bear a living child.

The more usual termination is exemplified by the following case:—

A woman aged 35 was pregnant for the 5th time, and the gestation had proceeded without trouble to the 5th month. She was then the victim to her first attack of appendicitis. After 7 days' expectant treatment, she was operated upon and a very small abscess containing not more than 1 drachm of pus was emptied and drained by a gauze drain. Her infective symptoms rapidly subsided and never gave rise to any apprehension, but signs of threatened abortion were manifest at the 4th day after operation. Morphia was boldly given but without good result, for within 5 hours the ovum was presenting through a dilated os. Bleeding being considerable the case was regarded as one of inevitable abortion and treated accordingly. Under large doses of ergot the abortion was completed during the subsequent 24 hours. The subsequent history of the patient was uneventful.

In spite of the abortion this is to be regarded as a fortunate case, for the termination of the pregnancy is the most usual occurrence. This is to be expected when one remembers the close proximity of the appendix to the uterus and its appendages; moreover, the spinal segments concerned in the reflex nervous mechanism of these viscera rise in juxtaposition.

The 3rd and last case of this series is quoted to indicate the less fortunate result and also show the advisability of early operative procedures:—

A woman of 29 was attacked by appendicitis during the 6th month of her second pregnancy. After a month medical treatment the condition had apparently subsided and disappeared. The pregnancy, which was not interrupted, proceeded satisfactorily until full term. The delivery was normal and natural, but with 36 hours of the labour the mother manifested signs of infection of the pelvic peritonitis. This unhappily spread, and she died 3 days later. At the autopsy it was clearly seen that the generalised peritonitis present had originated in the rupture of a small quiescent appendical abscess which was a residue of her prior attack. When the uterus was suddenly ended and the abdominal contents restored to their usual position, the adhesions which had been enclosed this tiny abscess had been broken and the general peritonium infected.

The main points of interest and instruction brought out by these cases are:—

1. *The necessity of early operation.*—It is always possible that acute appendicitis may subside under medical treatment and without suppuration; nevertheless the danger of sepsis is so great that the policy of immediate operation is much the less risky. The danger of allowing any infective material to remain, even though it be thoroughly shut off by adhesions, is from the sudden change which occurs in the disposition of the abnormal viscera at parturition. The rigorous contractions of both abnormal and uterine muscles, the possible manipulation of the abdomen by the accoucheur together with the reduction in size of the uterus—all tend to the breaking down of adhesions and the diffusion of any pus collection, no matter how small.

Therefore the soundest treatment is to operate and direct attention towards the prevention of abortion, or, if this become inevitable, to regard and treat it as usual.

2. *The danger of ventral hernia.*—The severe strain to which a parturient woman subjects her abdominal wall renders the occurrence of

a hernia through her scar a great possibility. The use of the split-flap method of opening the abdomen, thorough suturing of the different layers of the abdominal wall, and the use of a firm but elastic belt during pregnancy—all tend to obviate this troublesome sequela.

3. *The occurrence of abortion.*—Unless there is any special reason why the woman should bear a living child, it is probably the best plan not to attempt to prevent the expulsion of the ovum or foetus. The risk which abortion adds to the operation is extremely small, and the woman is relieved of the danger of the subsequent confinement.

After the abortion, the abdominal wall or viscera have an opportunity of recovering and returning to a sound and healthy condition before the occurrence of another gestation. It is rarely possible to prevent abortion, and, in the absence of exceptional circumstances, it is probably wiser not to attempt to.

Appendicitis may occasionally occur during the puerperium. Such a post-partum complication almost invariably gives rise to a suspicion of puerperal sepsis and he is a skilled diagnostician who can correctly sum up the case. If pus forms and becomes localised, the treatment is operation, which may reveal the real condition. In any case the treatment of the two conditions is similar, namely, expectant treatment until there is evidence of abscess formation, and then operation. Vaginal examination is the most useful help towards diagnosis, for pelvic cellulitis is usually attended by signs recognisable by this examination whereas appendicitis, unless associated with pelvic inflammation, is not.

Appendicitis is the commonest acute abdominal infection which may complicate pregnancy, and its treatment is the finger post to the treatment of any of the rarer forms which may occur.

It may be said that when a pregnant woman develops the signs of an acute infection of the peritoneal cavity, early operation is indicated and offers the best chance of saving the patient's life.

TREATMENT OF NEURALGIA.*

BY

DR. JOGENDER LALL CHUNDRA, L. M. S.

Late Prof. of Anatomy, College of Physicians and Surgeons, Calcutta.

Neuralgia may be defined as a paroxysmal pain along the course of some nerve or its branches. In all cases try to ascertain the cause and remove the same if possible. The treatment resolves itself into :—

* Specially Contributed to *The Antiseptic*.

I. Internal tonics and nerve sedatives.

II. Local applications.

- I. Rest in bed is indispensable ; warm baths are good. The writer recommends Acid Glycerophosph. Co: drachm dose with a drop of Liq. Arsenic Hydrochlor. twice a day after meal.

Bromides may be used when nervous system is irritable. Nervous excitants, *e. g.*, Strychnine, should be avoided when nervous system is exhausted. Alcohol, as a rule, should be avoided. Seidlitz Powder, Cod Liver Oil, two to three pints of milk and plain food are to be used regularly *when pain is the acute symptom*.

1. PROF. SAVILL'S prescription :—

R.—Tinc. gelsemium : m. x.
Antipyrin : gr. v.
Ammon. Bromide gr. x.
Aq : Chloroform ad. ℥ ½.

Mft. for a dose : Sig. one every 3 h. till relieved..

2. The writer's favourite combination :—

R.—Phenacetin gr. v.
Caffein citras. gr. i.
Camphor. Monobromata gr. ii.

Mft. for a pulv : Sig one ev. 3 h. up to 3 or 4 powders.

3. Anti-Nervine : (a combination of Salicylic Acid 1 part, Acetanilide 2 parts, Ammon. Bromide 1 part.)

4. Exalgin : it is best ordered in alcoholic solution.

R.—Exalgin ℥ i.
Rum
Aq : aa (each) ℥. iii.

Dose: a tablespoonful in water ev. 4 h.

II. LOCAL APPLICATIONS :—

1. Paint the affected part with the following :—

R.—Chloral hydras.
Camphor aa. ℥ ii.

2. Small compresses wet with guaicol and applied over painful spots afford immediate relief (*Treatment*, Oct. 14, 1897).

3. In the *Practitioner*, Aug. 1896, the following prescription is highly recommended :—

R.—Aconitine gr. i
Veratrine gr. vi.
Amyl. hydrate ℥ i.
Collodion B. P. ℥ i.

Mft : The mixture forms a colloid which should be brushed over the painful part 5 or 6 times a day forming successive films.

4. Writer's formulæ :—

(a)

R—Tinc : Aconite ʒ i.
 Camphor ʒ ii.
 Chloroform ʒ ii.
 Menthol ʒ ii.
 Eau de Cologne ʒ vi.

Mft : Apply with a pencil of cotton over the painful part, followed by rapid fanning.

(b)

R—Oil Cinnamon m. x.
 Oil Galtheria ʒ i.
 Menthol ʒ i.
 Camphor ʒ i.
 Eau de Cologne ʒ ii.

Mft : Direction for use as mentioned above.

5. *L. Union Medicale*, June 4, 1892, published the following combination :—

R—Chloroform ʒ vi.
 Sulphuric ether ʒ i.
 Spt. camphor ʒ iii.
 Tinc. opii ʒ 1½.

Mft : Soak a small piece of flannel with the liniment and apply over the painful part.

6. The writer strongly recommends the local application of lig. adrenalin (1 in 1000) P. D. & Co. along the course of nerve; it affords ready relief when other medicines have failed.

7. BUXBAUM recommends hydrotherapeutic treatment; the patient is exposed to alternating douches of hot and cold water applied to the painful area.

8. DAWSON TURNER, in *B. M. J.* April 4, 1908, advocates the use of kataphoresis or electric osmosis of a Salicylic "Ion" (applied on the negative pole) or of a Quinine "Ion" (applied on the positive pole) over the painful area, being careful to avoid abrupt changes in the strength of the galvanic current.

9. Weak electric current is very useful. Place the positive pole on the seat of pain and the negative pole anywhere. The pain increases at first, but diminishes after a few minutes (SAVILL.)

The action is analogous to and equal to the mechanical percussion (GOWERS).

10. DURAND (*Four. de Med.*) recommends :—

R—Veratrinæ.
 Morphin. Hydroch aa 0.1.
 Ung. aq rose 0.5.

Mft : Ung. Apply a very small portion to the painful area with slight friction once or twice a day.

Varities of Neuralgia :—

- | | | |
|-----|-----------|--------------------|
| 1. | Neuralgia | Gastric. |
| 2. | " | Facial. |
| 3. | " | Intercosta. |
| 4. | " | Sciatica. |
| 5. | " | Ovarian. |
| 6. | " | Uterine. |
| 7. | " | Coccydynial. |
| 8. | " | Renal. |
| 9. | " | Vesical. |
| 10. | " | Cardiac. |
| 11. | " | Mammary. |
| 12. | " | Bronchial. |
| 13. | " | Cervico-occipital. |
| 14. | " | Metatarsal. |
| 15. | " | Articular. |
| 16. | " | Supra-orbital. |
| 17. | " | Ocular. |

1. GASTRIC NEURALGIA : See my article on Gastralgia.

2. FACIAL NEURALGIA (*Tic Douloureux*) :

Internally :—

(a) In Malarial cases, large dose of quinine hydrobromate.

(b) In Rheumatic cases, Salicylates.

Butyl Chloral Hydras has a sedative action on the facial neuralgia and so also Gelseminum. (LAUDER BRUNTON).

Tabloid Butyl Chloral Hydras et Gelseminæ acts admirably well in early stages of the disease.

PROF. HORSLEY states that if Gelseminum be pushed to produce its toxic effects (one drachm of Tinc : Gelseminum) ev. 2 h., the patient is relieved even in the later stages.

Locally :—

(a) Application of Ethyl Chloride spray is beneficial.

(b) Chloral and Camphor equal parts are to be rubbed rupee size over the seat of pain.

N. B.—In each case the skin of face should be first protected with a thin layer of grease.

(c) Injection Method :—

DR. SCHLOESSER advocates the use of 80 per cent. alcohol injection in neuralgia, especially in *Tic Douloureux* and recommends to inject with

certainty into the trunk of the three branches of 5th nerve or into its roots. To hit the nerve with certainty, the author advises injecting into the foramina through which different branches enter the face from the skull, *i.e.*, for the 1st branch the supra-orbital foramen, for the 2nd branch infra-orbital foramen, and for the 3rd branch inferior dental (mandibular) foramen.

The number of injections necessary varies from 2 to 10; 3 on the average. The amount of 80 per cent alcohol injected is from 1 c.c. to 4 c.c.

DR. HARRIS recommends 15 to 20 minims of 80 per cent. alcohol injected slowly, a few drops at a time.

(d) *Surgical treatment*:—

If relief is not obtained, the Gasserian Ganglion operation may be performed.

3. INTERCOSTAL NEURALGIA:—

Counter irritation, *e.g.*, fly blister, mustard, &c., is of great value.

Huxley's Menthol et Wintergreen Cream affords ready relief.

Remove the cause if possible; *e.g.*, a callus pressing on the nerve should be operated.

DESPLATS and other continental physicians recommend subcutaneous injections of air.

Injection of air beneath the skin in the vicinity of the affected nerve, gives relief from the pain at once or after a brief delay; a quarter to half a litre should be slowly injected; this takes 8 or 10 days to be absorbed.

4. NEURALGIA OF SCIATIC NERVE (SCIATICA).

Internally:—

(a) In rheumatic cases, Salicylates.

(b) In gouty cases, Colchicum and Salicin.

(c) In malarial cases, Quinine.

N. B.—During convalescence, Iron and Arsenic.

Locally:—

Rest is indispensable.

i. Counter-irritation *e.g.*, fly blister over the seat of pain.

ii. Carbolic acid to be touched quarter inch apart along the course of the nerve.

iii. Hot baths followed by a flannel trouser.

iv. Electricity is not of much benefit.

v. Massage with pure warm mustard oil for half an hour is recommended by the writer.

vi. Hypodermically:—

(a) Cocaine hydrochlor. gr. $\frac{1}{4}$ - $\frac{1}{2}$.

(b) Morphin Sulph. gr. $\frac{1}{4}$ - $\frac{1}{2}$.

(c) Injection of 15-20 drops of distil water into the nerve.

(d) Acu-puncture may be tried.

vii. SHOEMAKER recommends Adrenalin ointment to be rubbed well over the course of nerve (*Monthly Cyclopædia and Medical Bulletin*.)

5. OVARIAN NEURALGIA:

Ammon Chloride acts well.

6. UTERINE NEURALGIA:

Ammon Biomide with uterine sedatives.

7. COCCYDYNIAL NEURALGIA:

Laxative, hot bath and sedative application are good.

8. RENAL NEURALGIA:

Hot fomentation, belladonna application and nervine sedative are recommended.

9. VESICAL NEURALGIA.

Remove the cause if possible; hot fomentation and internal administration of hyoscyamus are good.

10. CARDIAC NEURALGIA (*angina pectoris*):

Inhalation of Amyl Nitrate affords ready relief.

11. MAMMARY NEURALGIA (*Mastodynia*). Support the breast by a bandage. Apply soothing liniment or poultices of castor leaves, and paint the nipple with a strong solution of cocaine hydroch.

Excessive lactation should be stopped.

Drop dose of Tinc. Phytolacca is recommended in *Medical Annual*, 1896.

12. BRONCHIAL NEURALGIA:

Treat the cause; local sedative or counter-irritation is good.

13. CERVICO-OCCIPITAL NEURALGIA:

Phenacetin gr. -v acts admirably well.

The writer recommends the following:—

R—Lint aconite.

„ Belladonna.

„ Chloroform.

„ Menthol : aa. ʒ ii.

Mft: To be rubbed over the seat of pain.

14. METATARSAL NEURALGIA :
Broad shoe to prevent pressure over the heads of the metatarsal bones is recommended.

15. ARTICULAR NEURALGIA :

Paint the part with guaiacol ; if too strong dilute it with glycerine.

16. SUPRA-ORBITAL NEURALGIA :

Salophen acts well.

17. OCULAR NEURALGIA :

NORBURY recommends for pain along the eye not associated with any inflammatory condition of the organ, the following counter-irritants:—

R.—Menthol gr. xxx.
Spt. Rosemary.
Spt. Lavender.
Vin. Gallaci aa ʒi.

Mft. To bathe the forehead and temple briskly.

The writer takes the liberty of publishing in synopsis the advices of some of the leading physicians of the age:—

Taylor:—

1. Acetanild gr. iii-viii.
Caffine citras gr. ii.
2. Ammon chloride gr. xv-xx.

Every 20 minutes till relieved.

Thrice a day.

Murrell.—

Butyl chloral hydr. gr. v.
Gelseminin gr. ʒss

Three times a day.

Hirt.—Strong cutaneous faradization by brush.

Trousseau.—Ext: Belladonna gr. ½ every hour until dizzy ; then diminish the dose and continue for several days.

Gowers.—Hypodermic injection into the seat of pain.

- (1) Morphin gr. ½ and atropin gr. ʒss.
Sulph. tabloid.
- (2) Cocaine hydroch. tabloid gr. ½-1.
- (3) Gelseminin gr. ʒss.

Sequin:—

R.—Aconitin gr. ʒss-ʒv.
Glycerine
Alcohol aa m. iv.
Aq: Menth. pip. ad ʒi.

Mft. for a dose: Sig. one before meal thrice a day.

Ringer:—

1. Paint oil Menth. pep.
- or 2. R.—Morphin oleatis gr. 1-2.
Oil Menth. pep. ʒi.

Shoemaker:—

1. Ammon Valerianate.
or Zinc. Valerianate in. gr. xx dose.
2. Local application.

R.—Morphin Sulph. gr. xx.
Chloral hydrate.
Camphor aa ʒi.

Mayer:—Castor Oil 1-2 oz. dose every morning till the pain is relieved. This ceases to purge after a few doses. It should be given in foaming ale or Essence of Anisi.

Thornton:—

Menthol gr. x.
Alcohol ʒi.

To paint locally.

Hamen:—Spray of ether.

Gross:—

R.—Quinine Sulph. gr. ii.
Morphin Sulph. gr. 1/20.
Strychnine Sulph. gr. 1/30.
Arsenious Acid gr. 1/120.
Ext. Aconite gr. ½.

Mft. for a pill. Sig. thrice a day.

Baltimore:—

R.—Chloroform.
Tinc: Aconite aa ʒii.
Lint Saponis ʒiii.

To apply locally.

Dana:—"In obscure cases: "

1. Hypodermic injection of Strychnine gr. ⅓ till physiological symptoms ensue.
2. Rest in bed.
3. Liquid or semi liquid diet.
4. Much fluid to drink.
5. Pot: Iodide and Iron (big dose) as tonic.

* MALARIA, SPLEEN, AND QUININE. A Few Clinical Cases.

BY

MR. A. M. MASILAMANI MUDALIAR, L.M.S.,
Asst. Superintendent and 1st Instructor, Royapuram Medical School.

The following cases under my observation and treatment are sent for publication as they speak for themselves in reference to the main

* Specially contributed to The Antiseptic.

points raised in my two articles which appeared in the April and November numbers of *The Antiseptic* (1909).

It is hoped that they will make an interesting reading.

1. *Fred. M., Eurasian, age 12 years, No. 16, Old Post Office Street, Rayapuram.*—He is a student of St. Mark's School, Rayapuram. Was seen on 26th August 1909; had fever for two months previously on and off. Had taken Quinine for a few days at a time.

26-8-09. Spleen enlarged 6 times the usual size; is anæmic. No appetite, feels weak. He was put on Quinine 3 grs. T. D. He was seen every fortnight or so. His appetite improved and his general health improved. Spleen diminishing in size.

30-7-09. Spleen about 4 times enlarged. Quinine to be taken twice a day.

This he continued for a month and then he felt quite well. He discontinued the drug without permission. I met him on 14-9-09 with some fever, and on examination I found that the spleen could be felt on deep inspiration. It was soft. He was in fair health. He was asked to take one dose of Quinine every day for another month but he took it for a few days only and discontinued treatment.

I sent for him to day (10-9-09). He says he had fever again one day last month. He is rather pale and has a large spleen (about 4 times enlarged.)

N.B.—This is the result of neglecting Quinine treatment. He is since taking the drug regularly 3 grs. T. D. up to date. He is improving rapidly.

2. *M. Udayar, age 15 years, No. 8, Dimensey Road, near Chulai, Hindu Burial Ground.*—Recommended for treatment and observation by Assistant Surgeon R. Mahadeva Aiyar, M.B. & C.M.

23-9-09. Anæmic, unable to do his work (a potter); spleen reaches the midline internally and the level of the umbilical line inferiorly; appetite very poor, vomits food, has a dull look; has occasional attacks of fever. He has had fever on and off for one year. Mr. Mahadeva Aiyar demonstrated good specimens of benign parasites from his blood.

Course and treatment.—23-9-09. Was put on Pelletier's Quinine Sulphas in solution (4 grains a dose T. D.) 2 hours before food with 10 grs. of Soda Bromid in each dose.

11-10-09. Seen. Appetite has improved. No fever since. Spleen diminishing—is reduced to one inch beyond costal arch. It is soft. Is able to do work and is cheerful. Was asked to take 2 doses only every day.

1-11-09. Seen. Spleen felt only on deep inspiration. Has had 2 oil-baths. He thinks he is perfectly well. Quinine was ordered to be continued once a day, which he is doing up to date. Anæmia has disappeared; no unpleasant effects. Has had no iron, etc.

Quinine, only Quinine, and nothing but Quinine.

3. *E. Thirumalayya—Compounder, Municipal Hospital, Cuddapah, age 40 years; present residence, No. 8, Washerman Ally, Sowcarpet, Madras.*

History.—Subject to Malaria for the last 15 years. Suffers during the months of January and February, even March, every year.

The Treatment adopted was:—15 grs. in one dose every day during the days he gets the rigors which would generally be 4 or 5 days. Thereafter he took 2 or 3 grain doses T. D. for a week. On the whole he has never taken Quinine continuously for a fortnight. This year the fever with which he was attacked in January 1909 did not abate as usual by the end of March. But it has persisted till now (18-11-1909) coming every two or three days. It did not yield as in the previous years to his usual mode of treatment; further it has made him weak, anæmic, breathless on walking. He has lost his appetite. His condition became alarming and therefore he went to Madras for undergoing a course of treatment.

18-11-1909. On examination the spleen is hard and enlarged to umbilical line below and nearly to midline internally. Is very weak and anæmic. Not able to move about. Fever and jaundice present. He was in an anxious state of mind. Breathlessness easily brought on.

Treatment:—Pelletier's Quinine grs. v in solution (Lemon Syrup, Soda Bromid gr. x and Tinct. Asafoetida m. xx with each dose) four times a day. On the 20th Nov. 1909 became freed of fever but complained of nausea. He was advised to take the Quinine 2 hours before or 3 hours after food. He came 10 days after and said that his appetite had improved immensely. He had no fever at all. He was feeling better in every way. He was asked to take 3 doses a day. He is now under treatment and shows himself every week only to say that he is steadily improving. The spleen does not feel so heavy or hard as before. He is quite convinced of the efficacy of his prolonged treatment, and the secret of "Quinine for malaria until the spleen returns to its normal size" he says is a very valuable one. He is still taking 3 doses and with no unpleasant symptoms.

N.B.—This case is interesting from many points of view. He comes from an important centre (a most malarious district). The

method of treatment he adopted shows which way the wind does blow in those parts. His improvement so far speaks volumes in favour of the prolonged treatment. His further progress will be keenly watched, as after his recovery he is sure to recommend this method of treatment in the case of persons with enlarged spleen of whom there are plenty in Cuddapah.

4. *A Hindu girl, 10 years old, admitted as an inpatient on 4-11-09, returned from Mauritius.*

History.—10 days of more or less continued fever with a stiff neck for the last 7 days; good history of having had malaria at Mauritius.

Examination (4-11-09).—Temperature ranging between 101° and 102·8°. Spleen enlarged about 6 times the usual size. Liver slightly enlarged. Has a 'stiff neck' with pain. The neck is fixed in an extended state. It cannot be bent or turned to a side.

Blood examined and no malarial parasites were found.

Treatment.—Bowels opened with calomel; diaphoretic mixture given.

Quinine in 2 grain doses was given 4 times a day.

For the "stiff neck" (which was suspected to be due to spinal congestion) Ung: Hydrarg., about 2 or 3 grains, was rubbed over the cervical spine.

The patient did not become worse, but continued to remain more or less stationary. The child was rather restless at nights.

15-11-1909. A friend of mine, a medical gentleman, advised that as the fever was stationary the Quinine might be given in larger doses, viz: 5 grains T. D. I did so, not without hesitation. The dose was commenced early in the morning and by 6 P.M. the three doses were given.

The child was slightly drowsy at 2 P.M., 2 hours after the 2nd dose, but the mother, who was there attending on the child, did not think that the drowsiness was anything worthy of notice.

The third dose was also given about 5 P.M. The child remained very drowsy all night.

16-11-09 (7 A.M.) The child still drowsy, but pulse respirations, &c., are normal. Temperature fell to 100° and 99°. Corneal reflex present, pupils normal. Quinine was not given to-day. By 11 A.M. the child was fairly well and drowsiness had passed off to a great degree.

4 P.M. Child quite well. Temp. 100°.

17-11-09 Quinine was again given 3 grains T. D. Temperature fell in 2 days to normal. Spleen just felt on deep inspiration and child began to improve in health rapidly.

25-11-09. Child almost quite well to all appearance, but the spleen can still be felt but with some difficulty.

1-12-09. The child was put on 2 doses only of Quinine. Spleen cannot be felt.

28-12-09. No medicines; the child is quite well.

5. *C., son of S. Konar, No. 67, Armenian Street, Georgetown;* said to have suffered from fever for a month previously, here and at Trinopolis.

10-11-09. Spleen enlarged—felt 2" below costal arch towards the umbilical line. Is pale and does not take his food properly.

Was put on Quinine 1½ grains thrice daily.

10-12-09. Spleen at costal margin. Has improved in his appetite. Is more cheerful and plays about freely. The anæmic condition is disappearing.

Advised to continue the drug in one grain doses twice a day. Asst. Surgeon R. Mahadeva Aiyar, M.B. & C.M., reports: "I saw this boy in my house on 1st January 1910 and found him in much better health than he was a month ago. The Quinine is being continued with no ill effects and to the advantage of the patient."

6. *G. (a female aged 25) No. 58, Portugese Church Street, Georgetown.*

History. For 3 months previously not in good health. Attacks of fever on and off. Cough very troublesome and latterly broncho-pneumonia set in. Had a severe attack of fever with rigors on 25-9-1909. Since then 2 attacks of fever every day. Temperature always over 100° and during the attack rising to 103°. Was getting paler and thinner. Vomiting persistent during the 10 days previous to examination; vomited all her nourishment; restless and sleepless. Quinine was tried once or twice but was not steadily given.

4-10-1909. *Examination.* Broncho-Pneumonia and Pharyngitis present. Spleen enlarged about 4 times the usual size.

Treatment. Besides the usual treatment for Broncho-Pneumonia 5 grains of Pelletier's Quinine Sulphas in solution was given four times a day. About 5 days after, the fever abated and the Quinine was pushed on, and 5 days later (i.e., after 10 days of Quinine treatment) the fever

subsided. No rigors. Quinine was then continued three times a day for a month when the general health improved and the splenic enlargement perceptibly diminished. Quinine was thereafter continued twice a day until about the beginning of December when the splenic enlargement disappeared altogether. Her general health was steadily regained. She is quite free from fever. Her throat condition (Pharyngitis) is being attended to.

7. *Mr. P. S. Pillai, age 25 years, Vellala Street, Pursawalkum.*

History. On the 4th September 1909, had an attack of fever at Chittur. He suffered from this fever on and off till the 25th September 1909 when he came to Madras.

He was treated with Quinine 5 grs. T. D. for a week. Fever continued in spite of it, though on some days at a stretch he had high temperature and the next few days only slight rises. Then his blood was examined for malarial parasites with a negative result. A hypodermic injection of Quinine was given. Splenic enlargement was detected. Quinine 5 grains T. D. was continued for a fortnight, but the fever still persisted, the morning temperatures now and again falling to 99°, but the evening temperature rose to 102.5° occasionally. A worrisome cough set in, and his appetite being still poor his nourishment was bad. He was on the whole observed to lose ground and a suspicion of early tuberculosis of lung was entertained and the Quinine treatment was somewhat relaxed and guaiacol was given in addition.

14-10-1909. The case was taken up entirely as Malaria, the spleen being 6 times the normal size.

5 grains of Quinine T. D. was given steadily day after day for one month when the fever subsided; the patient regained his appetite and some strength. He felt in every way improved. Along with this the spleen showed distinct diminution in size. The treatment was continued till the beginning of December 1909. The patient has had no fever and the spleen has reached nearly its normal size. He is now taking 2 grains of Quinine twice a day. He is also taking some iron for the last three weeks.

25-12-1909. He was seen on the platform of a Railway Station in the North Arcot District. He had resumed his work and was evidently doing well. Some more Iron was all that was required.

N. B.—This is a typical case where mere persistence with the Quinine on recognizing the large size of the spleen produced splendid results.

8. *A Hindu Female, age 20 years, No 77, Virapillai Street, Georgetown, removed recently from Mylapore.*

History.—Has had fever for the last 4 months and along with it some cough, emaciation, anæmia, amenorrhœa, anorexia and great weakness.

The patient was subjected to various kinds of treatment, but Quinine was given only casually.

Fever for the last two months was very persistent and temperature for some days previous rising to 104° or 105°. The patient's life was despaired of.

13-12-1909. Spleen (6 times the usual size) Pharyngitis, and other symptoms and evidences pointed very directly to "Malaria" being the cause of the mischief.

Major C. B. Harrison, I.M.S., very kindly saw the case at my request and fully concurred with me that Malaria was at the bottom of all the trouble and Quinine was the drug to be steadily tried.

The patient was put on Pelletier's Quinine: 5 grains of Quinine 3 times a day. This, the father, a very intelligent person, consented to do, after getting me to answer a hundred and one questions regarding the "Quinine Treatment," of which he had his own good share of doubts and fears.

In the end Quinine 5 grains T. D. was decided upon.

The first three doses mitigated the fever and on the second day there was no fever at all. The patient has since shown a very steady improvement in all respects. She was again seen by Major C. B. Harrison, I.M.S., on the 24-12-09 when he observed that the spleen had become less in size and there was improvement all round. He remarked that she kept thin and anæmic and some iron and arsenic were indicated. She has had two or three baths. Her general condition is good.

Her throat was swabbed twice with a weak Mandl's Solution.

8-1-10. No cough at all, feels stronger, appetite good. No pain in abdomen. Oil bath was given on 5-1-10 and she felt no inconvenience whatever. Quinine 5 grs. T. D. up to date. Her blood condition has improved. She feels stronger. She has begun to put on flesh. Was advised to take 2 doses a day of Quinine.

9. *S. K. (a Female aged 24), Old Jail Street E.*

History.—Fever set in from 11-12-09; cough and pain in the chest also. Temperature ranged from 99.6 to 104°. The cough was very troublesome. She had severe paroxysms of cough from 4 to 11 A.M. almost every day

Some pleurisy and bronchitis was detected on the left side of chest. Cough mixtures, Quinine for a few days only, inhalations, local applications, sleeping draughts, &c., had been tried.

28-12-09. The spleen was found enlarged about 4 times the usual size and the throat was found very congested and mucous membrane considerably swollen. The patient was put on 5 grs. of Quinine T. D. Mandl's solution for the throat and inhalation of Tinct. Benzoin for the bronchitic condition.

In 2 days the temperature came down to range between 99° and 100°. Cough was better, and in a week's time there was no fever at all. The throat is being attended to.

6-1-10. She is now convalescing.

Quinine is being continued without any ill effect. It is given in solution with lime juice, 10 grs. of Sodium Bromide and 20 minims of Tinct. Asafoetida.

10. S. (a female, age 32 years), Old Jail Street, E.—Subject to attacks of malaria once in 2 or 3 months for the last 2 or 3 years. Takes Quinine with great difficulty for a few days only during the attacks. She has piles, and she believes that Quinine, always upsets her, the piles becoming worse. Whenever she takes Quinine, piles bleed badly and become very tender and painful. She suffers from headache and constipation also at the time.

Examination.—Rather anæmic, appetite rather poor; spleen easily felt at costal margin.

I explained how all these may be due to fever and the sluggish or congested liver, which is more or less present in all Malaria, might be the cause of piles and how constipation might make matters worse.

At last after 6 months of advice and explanation she agreed to adopt the treatment conditionally.

She was to try Quinine (5 grs. T. D.) for a month along with Cascara Sagrada, and every Sunday to take a dose of Seidlitz Powder. At the end of the month Quinine was to be continued further if the result was encouraging.

The Quinine was given in solution with plenty of Lemon Syrup—10 gr. doses of Sodium Bromide and 20 minims of Tinct. Asafoetida. The month is over and she has improved very much. The piles are no longer troubling her. She thinks she is permanently cured of them. She is now taking one dose of Quinine every day. The spleen could hardly be felt on very deep inspiration.

She has become one of the strongest advocates of "Quinine for Malaria."

N. B.—This case illustrates the great difficulty one experiences in the deep-rooted but groundless prejudice against the drug, and the large amount of patience that should be at our disposal.

Victory will be ours, but we should fight a hard battle. The golden Quinine will yet shine in all its splendour.

11. N. Pillai, Pondicherry, Tondiarpet, age 26 years.

7-12-1909. *History.*—For over a year, monthly attacks of fever lasting about from 3 to 10 days. The present attack is 10 days old.

Examination.—He is anæmic and weak. He is not able to move about, appetite lost; spleen is enlarged nearly to umbilicus forwards and downwards. It is soft. General condition of body fair.

Pelletier's Quinine, 5 grains T. D. in "Lemon and Bromide Syrup."

7-1-10. Spleen has improved wonderfully; spleen at costal margin only. Anæmia not so marked, appetite much better. He attends to his work for the last one week. He was asked to continue the Quinine in 5 grain doses B. D. for a month more.

N. B.—This case I put here to show that such spleens, if not followed up till reduced to their usual size, would become stationary, and at any moment, on the least provocation, would give trouble again.

12. R. Age 5 years; No. 102, Linghi Chetti Street.

History.—About the 18th November 1909, took ill with fever and cough. Temperature ranged from 103° to 105° for about 6 days.

He had occasional attacks of fever before this attack.

24-11-09. Spleen was found much enlarged (about 5 or 6 times the usual size). Quinine was given 2 grain T. D., after opening his bowels with Calomel and Mag. Sulph.

Temperature became normal after 3 days, and since then the Quinine treatment was continued for 20 days.

The spleen had improved a good deal, but was not reduced to the normal size. Quinine was discontinued too soon.

Today (10-1-10). I sent for the boy and found the spleen at costal margin. His general condition is not quite satisfactory. Slight anæmia and loss of appetite are present.

Quinine treatment, 1½ grs. twice a day was resumed.

A chronic pharyngitis is present.

N. B.—This case shows the result of neglecting Quinine treatment. There were no unpleasant after-effects of Quinine.

I record the above 12 cases in the hope that they would serve to teach our patients to continue the Quinine treatment for the required length of time.

I may mention that some of the abovenamed patients are close relations to medical men, while with regard to the remaining cases I may say that other medical practitioner or practitioners than myself are also acquainted with their particulars. I beg to acknowledge the help and the cooperation I have had from my brother practitioners.

There is in Madras many a spleen to be subjected to prolonged Quinine treatment, and I hope they might find encouragement in the abovementioned cases.

I will not be far wrong if I say that more than 75 % of the sick in Madras have enlarged spleens, and that treatment directed towards the latter would be of essential benefit.

When quinine is taken as regularly as morning coffee, the great question of Malaria will be easily solved. And then we might take our own time to employ other prophylactic measures. Quinine is *the* most direct and *the* most effective prophylaxis against this universal scourge.

Before I close I beg to invite the publication of such illustrative cases by other practitioners also, so that the public may realize the importance at once of the question.

Quinine *prevents* Malaria.

Quinine *diagnoses* Malaria.

Quinine *cures* Malaria.

"*Quinine for Malaria until the Spleen returns to its Normal Size*" is the chorus of my song.

Our Contemporaries.

MEDICINE.

Cases of Pneumonia.

BY

ARTHUR FELLOWS, M. B., C.M. [EDIN.]

THE following cases of pneumonia appear to be worth recording, the first because of the number of lesions; the other two on account of an infrequent sequel.

Case 1.—A well-nourished boy of 15. Was first seen on May 16th, 1909, with well-marked signs of early pneumonia of the right base. For four days he was delirious, with a temperature varying from 102° to 104°. On the seventh day the temperature fell to 100.7°, and there was every

appearance of a crisis. At night, however, the temperature was 102.4°; next morning it was 103°, and a pneumonic patch at the left apex was found to have developed. On the thirteenth day the temperature fell to 98.6° and there was again every appearance of a crisis; but next day the temperature had risen to 102°, and a patch of pneumonia was found at the left base. From the sixteenth to the eighteenth day the disease appeared to be resolving by lysis, and there was a general improvement in every respect. On the nineteenth day temperature assumed a zigzag character, varying from 98.7° in the morning to 101.6° at night, each day mounting slightly higher. The old area of dullness at the right base was found to be rising higher, but the breath sounds were readily audible right down to the base of the lung. The apex beat was not displaced, but a loud systolic mitral murmur had developed. The boy's general condition was very bad; he was wasting rapidly, and although not delirious, was very childish. Pus having been detected in the right thorax on the twenty-second day, a rib was resected, and a large quantity of pus evacuated. For a few days the patient seemed to improve, but the pulse rate kept at 130 to 150, the respirations at 30 to 40, and the temperature remained above normal. For some days the boy had complained of pain in the left hip, stating that he had sprained it shortly before the onset of the pneumonia. By about the twenty-eighth day the hip, which had assumed a position of semi-flexion and abduction, was found to be tense and swollen, especially on the abductor aspect. It rapidly became extremely tender, but no definite fluctuation could be detected. The discharge from the empyema had almost ceased, but the urine, which had been examined several times with negative results, was now found to contain granular casts, blood and much albumin. On the thirty-third day the patient was removed to the hospital, where Mr. Lansdown kindly saw him late in the evening, and at once performed an arthrotomy of the left hip, evacuating an excess of blood-stained synovial fluid from the joint but no pus. On the removal of the clips from the hip incision there was an escape of pus from the wound, which was found to yield a pure culture of the pneumococcus. The discharge from the hip ceased in a few days, but still the boy did not improve satisfactorily until the forty-third day, when there was a gush of pus from the thoracic incision (the tube had been removed some days previously), whereupon the temperature fell to normal and remained so. Through most of the illness the boy had taken nourishment well, but he had lost two stones in weight, and the rapidity of the wasting was shown by the development of very prominent striæ atrophicæ across the loins, on the right buttock and thigh, and on the right arm. When at the Convalescent Home he lost all trace of the nephritis, the left hip appeared to be as sound as the right, and he rapidly

put on flesh; but the pulse rate was still 100, and the mitral murmur was still present. During two months in the country the boy more than regained his lost weight, grew nearly three-quarters of an inch in height, and on his return was found to have a pulse rate of 75 and normal heart sounds.

The pneumococcus was thus responsible for three distinct and consecutive pneumonic attacks—an empyema, a nephritis and an arthritis. The nature of the cardiac condition was not clear. It is very improbable that it could have been an endocarditis, and the murmur bore no resemblance to a pericardial rub. Its history suggested a murmur due to dilatation, but if so, other physical signs of that condition were lacking.

As regards nephritis in pneumonia, DR. HECTOR MACKENZIE, during the discussion upon that disease before the Royal Society of Medicine in 1907, quoted twelve instances of the former in 750 cases of the latter, and of the twelve, eight proved fatal. The same speaker referred to sixty-three cases of pneumococcal arthritis occurring in pneumonia, collected from several sources, and of these forty-one proved fatal.

For statistical purposes this form of arthritis occurring in pneumonia should be distinguished from the corresponding joint condition occurring apart from any general infection.

In the following cases pneumonia was followed by thrombosis in the veins of the left leg.

Case 2.—A fragile man, of about 40, was taken ill with what was probably influenza on February 21st, 1908. When first seen, on the 27th, pneumonia of the right base was developing. He was very ill for five days, resolution occurred by lysis, the temperature falling from 103.5° to normal in five days. On March 17th, twenty-five days after having first taken to bed, he got up for the first time, and had just time to put on his trousers when he was seized with violent pain in the left leg, which almost caused him to faint. He at once returned to bed, and when seen a few hours later, the left leg and thigh were much swollen, very hard and tender. The superficial veins stood out in dark blue projections, acutely dilated. The circumference of the left calf was $2\frac{1}{4}$ inches, and the left thigh $1\frac{3}{4}$ inches in excess of the other limb. Nine days later the affected limb was still one inch larger than its fellow, the internal saphena vein could be felt as a thick cord, and there was much tenderness over the deeper veins. For several weeks there was much weakness and some swelling of the limb.

Case 3 presents several points similar to the foregoing. On March 2nd, 1908, a robust woman, of about 60, fell down a flight of stairs and

badly bruised the lower ribs of the right side. Five days later pneumonia developed in the right base. The symptoms and physical signs were typical of lobar pneumonia, but again resolution was by lysis. Twenty-five days after the original accident the patient got out of bed for the first time, and was suddenly seized with violent pains in the left leg, accompanied by swelling, the left calf being $1\frac{1}{4}$ inch more in circumference than the right. The swelling was firm, resistant and very hard, and the pain remained severe for several days, then gradually diminished, but the limb still needs the support of a bandage.

Many books make no reference to thrombosis as a complication or sequel of pneumonia, and personally I have not met with it in some 300 cases treated in Indian hospitals. DR. MACKENZIE, on the occasion already referred to, spoke of it as occurring once in every 150 cases, and usually in the left leg. In the two instances given above it will be noticed that the pneumonia followed some other condition, that it involved the right base and resolved by lysis. The thrombosis appeared with startling suddenness when the patient first stood up after three weeks in bed and when convalescence from the pneumonia was well established. The swelling was peculiarly hard, and there was no pitting on pressure.—*The Bristol Medico-Chirurgical Journal*.

The Use of Hexamethylenamin or Urotropin As an Internal Antiseptic.

AN editorial in the *Therapeutic Gazette*, October 1909, deals with the use of urotropin as an internal antiseptic. It has been known long ago of the use of urotropin in typhoid fever with the object of diminishing the number of typhoid bacilli in the urine, thereby preventing the spread of the disease by the contamination of the food or drink of other persons. It also diminishes the frequency of the genito-urinary complications of the disease. More recently it has been proved by CROWE that the antiseptic effect of the drug is eliminated in the biliary passages and that its administration can be resorted to for the purpose of preventing or combating typhoid and other infections in the biliary ducts and gall bladder.

In the issue of the Johns Hopkin's *Hospital Bulletin*, April 1909, CROWE makes a still further contribution to the study of excretion of this drug and points that when taken in fairly large dose, it speedily appears in the cerebro-spinal fluid. The average time would seem to be from thirty minutes to one hour between administration and excretion in the fluid. Using the fluid obtained from patients who were receiving this drug, he studied the effect of it upon the streptococcus and found that a

decided inhibitory effect on the growth of micro-organisms was exercised. He also found that if a subdural inoculation of animals was performed, and 60 to 80 grains of urotropin a day was given, the drug markedly deferred, and in some instances prevented the onset of a fatal meningitis. These doses are exceedingly large, being equivalent to several hundred grains a day for an adult. In this respect a further investigation will have to be made before it can be determined that ordinary doses actually arrest infection which is already present.

CROWES' experiments, with moderate doses, both in man and animals, show that they exercise a distinctly prophylactic influence. This drug is administered as a routine measure to all patients with lesions that commonly followed by an infection of meninges. The doses employed vary from 30 to 60 grains a day and there has been a complete absence of such complications, although an extensive series of cases has been under observation. The drug has also been used when given by the mouth before and after severe operations upon the cerebro-spinal system with the object of diminishing the chance of infection.—*The C. M. J.*

Petrol Poisoning by Inhalation.

THAT the fumes of petrol are not good for us has probably been the feeling of many, though cases of anæmia and chronic ill-health of the pasty-face type are much commoner than are those in which the symptoms have been acute. The following instance of acute petrol poisoning, however, occurred under the observation of Major B. W. Longhurst, of the Royal Army Medical Corps:—

About 6 A.M. on April 20, 1909, Mrs. X was washing her head with petrol, which had been recommended by one of her relations as "a good thing" for the hair; she poured the petrol into a wash-hand basin, and then, bending over, bathed her hair in it. While this performance was taking place she became giddy, staggered about the room, and fell on her bed apparently unconscious. Her husband immediately sent for advice and explained what had occurred. The odour of the petrol in the house and in the bedroom was overpowering. Mrs. X was lying on her bed in an almost unconscious condition, the pupils were widely dilated, the skin was cold and clammy, the breathing stertorous, and the pulse small and almost imperceptible. Her face was dusky in colour and swollen to a remarkable degree.

She was forthwith removed to another room, and placed in front of open windows in a current of fresh air. Signs of improvement showed

themselves immediately; she gradually regained consciousness; violent clonic spasms with shouting and screaming occurred, symptoms practically identical with those so often seen during the recovery from anæsthesia by nitrous oxide gas and ether. Soon after this the patient passed into a condition of collapse and shivered violently; she was placed on a couch, covered with blankets, and a little whisky and milk were administered; she remained quiet for about two hours, her temperature was subnormal but the pulse-rate was over 160 (varying from 160 to 200), violent tachycardia being present. As the patient recovered consciousness it was found that she was almost unable to move her arms and legs. A mixture containing digitalis was prescribed, and the palpitation had much improved towards evening.

On the second day palpitation was still present, the pulse-rate being over 100, but the patient did not complain of the thumping of the heart which was so distressing on the first day; the movements of the limbs were still very feeble, and she complained of stiffness of the fingers, also contracture of the left arm, with a peculiar tingling sensation amounting to actual pain. She was now able to take solid food and to go out for a drive in the evening. On the third day she had practically recovered, but still complained of the peculiar symptoms in the left arm, which remained for several days and then gradually disappeared under the influence of digitalis. Cases of this kind have proved fatal, and it is probable that this case might have been fatal had not the patient been removed to another room in time.—*The Hospital.*

Euquinine in Malaria of Pregnancy.

ALTHOUGH it is known that quinine may induce and intensify labour pains, yet many authors state that the drug may be given for an accidental malarial infection during pregnancy without danger. The possibility of a miscarriage must, however, always be taken into consideration. In some cases of pregnancy there is so marked an idiosyncrasy towards the drug that its administration is followed by very severe symptoms. EMANUEL GRANDE recommends Euquinine where pregnancy is complicated with malarial infection, since it is better tolerated and is not likely to induce uterine contractions. The drug, furthermore, is virtually tasteless, does not injure the stomach or intestines, is less likely to affect the nervous system, and is not so apt to set up an urticaria. In a number of cases reported, all far advanced in pregnancy, Euquinine proved a most efficient drug for malaria without in any way interfering with the well-being of the patients. Further experiments will be

necessary to determine if Euquinine can stimulate the nerves of the uterine plexus or the smooth muscle fibres of the uterus itself.—*The Therapist*.

Asthma : Calomel in.

THE writer prescribes a powder of calomel, from one-half to two grains, according to the habit of the patient, accompanied, of course, by some of the usual antispasmodic remedies, and his experience is that relief is rapidly obtained, even before purgation takes place. Other cathartic drugs do not seem to have the same effect or certainly not so rapidly, and the ease with which all the powder or tablet is taken is an important factor.—*Monthly Cyclopædia and Medical Bulletin*.

Lumbar Puncture in Injuries of the Head.

DR. P. SAVY has treated a woman, 43 years of age, who fell from a second story window. Sub-conjunctival ecchymosis suggested the possibility of a fracture of the base of the skull, but no operation was attempted as the patient rapidly recovered. About three months later the patient complained of stiffness of the legs with persistent headache, and in the course of a few weeks other symptoms indicating a meningeal process developed, and the patient complained of pain along the sciatic nerves. Drop by drop of blackish blood escaped by lumbar puncture and improvement soon followed the second and third lumbar puncture. About 40 cubic centimeters in all of the bloody effusion was evacuated, and the symptoms gradually subsided to complete recovery by the end of a month. The long interval of latency, the possibility of evacuating the blood at this late date, the rapid improvement and final recovery, all emphasize the importance of lumbar puncture in case of injury to the skull. He thinks that the extravasated blood did not cause the symptoms so much by compression as by the toxic action of the decomposing blood.—*Ibid*.

Quinsy : Treatment of.

THE frequency of suppurative amygdalitis in every day practice causes it to be a disease whose management is a matter of no small importance. Attempts to check its progress are usually futile, unless resorted to very early in the course of the attack. Such abortive measures consist in the administration of guaiacum, salicylates, etc., the use of throat paints, a brisk purge, and the external application of cold compresses. With regard to internal remedies a combination of aspirin and

salol, five grains of each every two hours, is most useful. Cold compresses in the early stages are of more value and give greater relief than poulticing. Surgical measures hold a high place in the treatment of quinsy, and the importance of early incision can scarcely be too strongly advocated, the mucous membrane being alone incised, and the operation completed by the use of Lister's Sinus Forceps. Occasionally the supratonsillar incision must be carried through the anterior pillar in order to secure free drainage. The question of tracheotomy seldom arises, though œdema glottidis has been reported by MYGIND, of Copenhagen, and others. In most cases the œdema of the uvula and epiglottis rapidly subsides as soon as the supratonsillar swelling has been opened.

Inhalation of steam from a bronchitis kettle often affords the patient great relief. Compound tincture of benzoin may, with advantage, be added to the water. The use of creosote is less beneficial, as it causes a dryness in the throat, which counteracts the otherwise soothing influence of the steam. Spraying the throat with hydrogen peroxide (10 vols.) is a valuable remedy, especially if there is much foetor or co-existent follicular tonsillitis. Considerable benefit is often derived from the sucking of small pieces of ice at frequent intervals. In virtue of its anæsthetic effect it renders swallowing much less painful, and has, in addition, a direct influence upon the inflammatory process.

Constitutional treatment should never be forgotten. The debilitating effect of an attack of quinsy is well known, and in many cases stimulation is called for. Strychnine may be administered hypodermically, and small doses of brandy if the patient is able to swallow. A mixture containing strychnine and iron is of considerable value as soon as the acute stage has passed. Nourishing fluid diet, such as eggs, milk, jellies, and clear soups, should be given throughout, and increased as the appetite returns. Serum treatment must be resorted to in those dangerous cases of quinsy which tend to assume a septicæmic aspect.—*Ibid*.

Nastin Treatment of Leprosy.

BY

JAS. DAVIDSON, M.D. (EDIN.)

[Neyoor Leper Homes, S. Travancore.]

I have been trying the Nastin hypodermic treatment at our Leper Homes at Neyoor, with short periods of interruption, for more than a year.

Practically all our cases are of the tubercular type. While I cannot say that I have had remarkable success, I can honestly affirm that improvement has occurred in every case treated, and the patients have invariably asked for more injections, when for any reason these have for a time been discontinued; so convinced were they of improvement.

Several assured us that the severe burning sensation or the stabbing pains had entirely disappeared, even after the second or third injection. The supraorbital neuralgia so often met with in this disease was in some cases much relieved.

One patient, a male, twenty-three years of age, suffering from well-marked nodular leprosy, with much nasal swelling and obstruction and large lobulated ears, derived very great benefit from the treatment after several weeks. The nasal obstruction was removed, and the patient could breathe freely. The ears began to shrink markedly, and the whole facial appearance changed—much of the leonine character being lost, and the bridge of the nose becoming distinctly narrower.

In all cases Nartin B was used, and weekly injections were given.

By keeping the syringe in ether, and the part thoroughly dry before injection, no abscess formation nor indeed any violent reaction was observed in any of the cases treated.

The only case in which, after the injections had been given, any deleterious effect could possibly be said to have been caused was one in which, though his general condition seemed to improve, corneal ulceration set in. This has resisted all ordinary treatment, and there is now much infiltration of the cornea and conjunctiva.—*The Therapist*.

Perityphlitis and Pneumonia.

BY

J. PELNAR.

Case 1.—A previously healthy woman, aged 35, was suddenly seized with a rigor, pyrexia, and pain in the right iliac region. A practitioner found only tenderness on deep pressure in the right iliac region. As the general symptoms were out of all proportion to the local, the writer, on the second day, was called into consultation.

The temperature was 102.2° , the pulse 100, and respiration 24.

There were no symptoms except the slight tenderness over the cæcum and the physical signs in the lungs were normal except for harshness of the respiratory murmur high in the right axilla. No diagnosis was made.

On the morning of the third day there was well marked bronchial breathing in this position. On the fourth day there was marked consolidation of the right apex extending downwards to the sixth rib. Pneumococci were found in the sputum. On the fifth day the bronchial breathing was less intense and the abdominal tenderness had completely disappeared. On the ninth day the temperature fell but did not reach normal. After the eleventh day there was a fresh rise of temperature. This coincided with the occurrence of an extensive exudation in the right iliac region. Its perityphlitic nature was confirmed by a professor of surgery. Pyrexia and moderate pain continued for 10 days. After the appendicular symptoms had subsided consolidation of the right apex persisted and a few days later the temperature began to rise every evening. Tubercle bacilli were found in the sputum. The patient gained 13 kilos. in weight, but a year later some apical catarrh persisted. There had been no return of pain in the right iliac region.

Case 2.—A workman, aged 62, was attacked with headache, diarrhoea, and heaviness of the legs. These symptoms increased in severity during 3 or 4 days, when a rigor occurred with increase of a habitual expectoration and a pain in the left side. He then took to his bed. A practitioner found the temperature to be 104° with no abnormal physical signs in the thorax or abdomen. On the following day there was repeated vomiting with violent abdominal pain and hiccough. The writer then saw him in consultation.

The temperature exceeded 104° , the pulse was 88, and the respiration was 28. The tongue was dry. The abdomen was tender and so rigid, especially in the right iliac region, that deep palpation was impossible. At the left apex was slight dulness with harsh inspiration in the left axilla. The sputum was catarrhal. During the examination hiccough was continuous. On the following morning the abdominal symptoms had entirely disappeared; there was neither tenderness nor exudation. Typical apical pneumonia then developed on the left side. At the second consultation, a week after the first, only slight dulness at the left scapula with bronchial breathing at the left suprascapular fossa and rusty sputum remained. The pulse was 120 and the respirations were 30. There was cyanosis. The abdomen appeared normal. Death occurred on the tenth day from heart failure.

Similar cases have been published by BENNECKE, OSLER, and others. A satisfactory interpretation has not been given. MARTENS and OSLER suppose that there is an atypical localization of pleural, diaphragmatic or perihepatic pain. This might explain the cases without objective

appendicular or peritoneal symptoms, but does not account for the signs of exudation in Case 1, or for the peritoneal irritation which has been found in cases in which an operation was performed. In neither of the writer's cases was there perihepatitis, for the hepatic region was neither tender nor painful. In both the pain and tenderness in the right iliac region extended towards the bladder. This was so marked in Case 1 that it was necessary to exclude parametritis. Neuritis of the ilio-hypogastric nerve as a cause was excluded by the exudation in Case 1. It must, therefore, be assumed that the symptoms are due to toxic peritoneal irritation in the cæcal region of pneumococcal origin.

Inflammation of the cæcum of pneumococcal origin is rare, but has been proved to occur. Better known is the pneumococcal peritonitis, which, especially in children, sometimes complicates pneumonia, but is more often primary. This pneumococcal peritonitis may be general or occur as a localised subumbilical and premental abscess or as perityphlitis. Pneumococci have also been found post mortem in the peritoneal cavity in fatal cases of pneumonia.—*The Medical Review*.

SURGERY.

Dislocation of the Neck during Sleep.

F. M. SHERMAN.—In 1907 the writer reported 2 cases of dislocation of the neck and since then he has seen 3 other cases. He therefore concludes that the condition, particularly in the form of subluxation, is not rare and suggests that some of the cases diagnosed as torticollis or stiff neck are examples of it. If the articular process on one side is displaced forward, the head will be more or less tilted toward the opposite side; it may also be rotated toward the opposite side. This is the position in subluxation. If the unilateral dislocation is complete, so that the articulating process has gone far enough to drop down in front of its fellow articulating process, the head will be turned toward the opposite side, but tilted toward the same side as the lesion. The method of reducing these dislocations, worked out by G. L. WALTON is to make dorsolateral extension and then rotation, usually under complete anæsthesia; but the writer succeeded in one case in reducing the displacement without anæsthesia. In the following cases the dislocation occurred during sleep from a sudden twisting movement.

A girl, aged about 19, awoke suddenly in much pain and unable to turn her head. This condition continued during the remainder of the night and the following day, when the writer was asked to see her for

"stiff neck." The head was tilted to and slightly turned to the left; the muscles on the right side of the neck were tense. On the following morning the condition remained much the same. Spinous process of the fourth cervical vertebra was about $\frac{1}{2}$ in. out of line with the others. Under ether anæsthesia the head was bent diagonally backward and to the left and then rotated to place. At once the condition of the neck was changed from that of rigid stiffness to one of free mobility. On recovery from the anæsthetic she was completely relieved, but deep tenderness in the right side of the neck persisted for several weeks.

A young man was seen. During the previous 6 months he had twice the same trouble in a minor degree. On awaking he felt pain and stiffness in the left side of the neck. This grew worse during the following day. On examination the head was decidedly tilted towards the right. The left side of the neck was painful and tender and the muscles were tense. As the previous displacement had been spontaneously reduced, the writer attempted reduction without anæsthesia. He found it somewhat difficult on account of spasm of the muscles but accomplished it with immediate relief. A stiff collar was applied and worn at night for some time. Some tenderness persisted for a few days.

In the great majority of cases of dislocation of the neck the displacement seems to be slight so that reduction takes place spontaneously. Such cases may occur during sleep or from direct trauma, as in football, and particularly from sudden turning of the head, especially if the muscles of one side are tense, as when carrying a heavy weight in one hand. Treatment by laterodorsal extension and rotation is very satisfactory and the extreme cases are probably as amenable as the slighter ones to this treatment.—*The M. R.*

General Spinal Anæsthesia.

BY

PROF. THOMAS JONNESCO.

The writer has introduced this method, which comprises two entirely new points: (1) The puncture is made at the level of the spinal column appropriate to the region to be operated upon; (2) the anæsthetic solution is by the addition of strychnine rendered more tolerable by the higher nervous centres. The anæsthetic used by the writer is stovaine, but tropocaine or novocaine may be used in the same way. The anæsthetic solution should be prepared at the time of operation in the following way. The necessary quantity of stovaine is placed in a glass tube furnished with a rubber stopper and previously sterilized in the autoclave. The substance itself need not be sterilized as it is antiseptic and

some of its properties may be destroyed by heating. In a sterilized stoppered bottle containing 100 grammes of sterile (not distilled) water 5 or 10 centigrammes of neutral sulphate of strychnine are dissolved. The former gives a dose of $\frac{1}{2}$ mgm., the latter of 1 mgm., for each 1 C.C. of solution. The weaker is used for the higher, the stronger for the lower, punctures. The strychnine takes some time to dissolve, so the solution should be prepared in advance. The preparation of the mixture for injection is made by filling a hypodermic syringe containing 1 C.C. and furnished with a needle for lumbar puncture, with the strychnine solution and injecting it into the tube containing the stovaine. This is then corked and shaken till the drug is dissolved, the syringe is again filled with the mixture and laid on a sterile compress, the needle being removed for the puncture. The syringe and needle should have been previously boiled. The syringe is the usual one of 1 C.C. capacity; the needle should have the bevel at its point rather shorter than usual to ensure the injection of the solution into the arachnoid space.

The writer previously indicated 3 sites for puncture of the spinal canal, but subsequent experience has led him to abandon two of them. Mid-cervical puncture was found apt to produce symptoms of bulbar intolerance and equally satisfactory results were obtained by injection at a somewhat lower level. Middorsal puncture was often difficult to perform and was abandoned. The sites for injection have been reduced to two. (1) The upper dorsal puncture is made between the first and second dorsal vertebræ. The chin being flexed on the sternum, the spaces between the spines are enlarged, and injection is easy. The needle is inserted below the spine next to the easily recognised seventh cervical. The patient being placed, the operator places his left forefinger on the space between the first and second dorsal spines, while the needle, held in the right hand, is pushed in following the upper border of the second dorsal spine. This puncture is used for operations on the head, neck, upper limbs and thorax.

(2) The dorso-lumbar puncture is performed between the twelfth dorsal and first lumbar vertebræ, the space being larger than that between the third and fourth lumbar vertebræ, the classical situation for lumbar puncture. The patient being seated, the site is easily found by counting the lumbar spines from below upwards, and the needle is inserted as before, following the upper border of the spine of the vertebra below. Injection at this site gives anæsthesia of the abdomen and lower limbs. In both cases the puncture is made in the middle line. After the resistance of the skin has been overcome, the needle is pushed on slowly, taking note of the tissues traversed, a momentary resistance being

felt at the dura mater. This passed, the escape of fluid indicates that the arachnoid space has been entered. In the upper dorsal puncture the fluid only comes in drops; in the dorso-lumbar it issues in a jet. It may sometimes be necessary to make the patient cough or even to aspirate with a sterile syringe before fluid is obtained at the higher level. On failure to obtain fluid one must conclude that the arachnoid space has not been reached and the needle must be partially withdrawn and again introduced till in proper position. Both the high and low punctures may be practised with the patient on his right side, the trunk being bent well forward. This position should be preferred in weakly or nervous patients to avoid fainting, and also when a second injection is required to prolong the anæsthesia.

The injection is made as soon as the escape of cerebro-spinal fluid indicates that the needle is properly introduced. It is inadvisable to allow much fluid to escape as this both causes pallor, faintness, etc., and favours too rapid diffusion of the anæsthetic, which is both useless and disadvantageous. As soon as a few drops have escaped the needle is closed with the left forefinger, the syringe fitted, and the anæsthetic solution slowly injected.

The position in which the patient is placed after injection is of great importance, as by it the diffusion of the anæsthetic in the direction required for its influence on the segment of the body to be operated on, may be effected. After upper dorsal injection if anæsthesia of the head and neck is desired the patient should be immediately made to lie on his back, the head being slightly raised if the operation is on the neck, horizontal if on the face or skull. For operations on the upper limbs or thorax, the patient remains sitting for 2 or 3 minutes, then lies on his back with the head, neck and chest slightly bent forward. If after 4 or 5 minutes the anæsthesia of the head and neck is not complete the patient's head should be lowered below the level of his body for 3 or 4 minutes.

After dorso-lumbar injection, if the viscera of the upper abdominal region (liver, stomach, spleen, pancreas, kidney, etc.) are to be operated upon, the patient remains seated for 2 or 3 minutes, then lies on his back, with the head and shoulders slightly raised. If after 5 or 6 minutes the anæsthesia is incomplete the patient may be placed in the Trendelenburg position for 3 or 4 minutes and then resume the posture above described. If the site of operation is the lower abdominal region, pelvis, perineum, external genital organs, or lower limbs, the patient remains in a sitting position for 5 or 6 minutes, then lies on his back with the upper part of his body raised and bent forward. The Trendelenburg

position should not be assumed till after 5 or 6 minutes spent in a sitting posture.

The quantity of strychnine and stovaine injected should vary with the site of the injection and the age and general condition of the patient.

(1) *Strychnine*.—For the upper dorsal injection in children of from 1 to 6 years $\frac{1}{2}$ mgm. in the c.c. (100 gm. sterile water, $3\frac{1}{2}$ cgm. neutral sulphate of strychnine); children above this age, adults, or old people $\frac{1}{2}$ mgm. in 1 c.c. (water 100 gm. strychnine 5 cgm.). For the dorso-lumbar injection in children of 1 to 10 years $\frac{1}{2}$ mgm. in xi c.c.; above that age, 1 mgm. (100 gm. water 10 cgm. strychnine).

(2) *Stovaine*.—For the upper dorsal injection in children of 1 to 5 years 1 cgm.; 5 to 15 years, 2 cgm.; above that age, 3 cgm. For the dorso-lumbar injection in children of 1 to 5 years 2 to 3 cgm.; 5 to 15 years, 4 to 6 cgm.; 15 to 20 years, 6 to 8 cgm.; above that age 10 cgm. The dose of stovaine must be modified according to the general condition of the patient. In cases of cachexia, marked anæmia, grave toxic or infective conditions or in patients suffering from the effects of a severe injury or profuse hæmorrhage 5 to 6 cgm. of stovaine produce a profound and prolonged anæsthesia, while the usual doses are badly borne and tend to cause pallor, vomiting, and faintness.

The s.g. of the anæsthetic solution compared with that of the cerebro-spinal fluid is interesting in view of its diffusion. The solution for the high puncture has a s.g. lower or equal to that of the spinal fluid which explains its rapid diffusion and action, while the mixture for injection at a lower level is heavier than the spinal fluid, acts more slowly, and has little tendency to diffuse upwards in the Trendelenburg position. After the upper dorsal injection anæsthesia is complete in 2 or 3 minutes; after the lower injection, in ten minutes. If anæsthesia is not produced within this time the solution has failed to reach the arachnoid space and the puncture and injection should be repeated. Cases of failure are not due to idiosyncrasy, but the patient by a slight movement has displaced the point of the needle and the solution in whole or in part has been injected between the dura mater and the bone. Cases have occurred in which a second or even a third injection proved necessary, the anæsthesia obtained being normal in spite of the quantity of solution injected, which would have produced serious symptoms had it all penetrated to the arachnoid.

During the anæsthesia the patients are completely conscious and the writer converses with them so as to distract their attention. The field of operation is concealed by a screen adapted to the operating table

at the level of the neck, which is less objectionable to the patient than the mask sometimes used. The immobility of the limbs or of the head and neck, due to the paresis produced by the injection, is a great convenience to the surgeon, but occasionally complete anæsthesia is obtained without paresis. After the lower injection the intestines and other abdominal viscera are immobile—a great advantage, especially in gynecological operations. The pallor, sweating and vomiting observed in spinal anæsthesia obtained by stovaine alone are rarely seen when strychnine has been added, and complications are less to be attributed to the method described than to departures from it.

The duration of the anæsthesia for the doses given varies from $1\frac{1}{2}$ to 2 hours. The writer warns those unaccustomed to the method against seeking safety from complications in smaller doses. Though anæsthesia may be obtained with less than 3 cgm. of stovaine for the high and 10 cgm. for the low injection, it is neither complete nor lasting; the patient feels no pain, but retains the sensation of contact so that he feels the traction on the viscera. Should the duration of the operation exceed that of the anæsthesia a second injection should be given. The patient is laid on his side; the dose should be equal to, or less than that originally injected according to the probable duration of the operation.

Sequelæ, common after spinal anæsthesia from stovaine alone, are rare when strychnine is added. Headache, though usually slight and transient, occurred in $6\frac{1}{2}$ per cent. of the cases. Retention of urine ($4\frac{1}{2}$ per cent.) occurred in the same class of cases as after inhalation anæsthesia. The temperature on the day of operation never reached 104° and was below 98.6° in 52 per cent of the cases. Vomiting was rarely observed and paralysis was not observed.

The writer has performed 398 operations by this method, in 103 of which the injection was made at the high, and 295 at the low level. The operations performed with anæsthesia produced at the high level included 14 on the skull (12 craniectomies for epilepsy); 45 on the face (22 epitheliomata of the lips, with removal of glands, numerous plastic operations on the face, removal of the tongue, and resection of both upper jaws) 23 on the neck (6 thyroidectomies, 1 total removal of the larynx); 7 on the chest (5 for removal of the breast); 14 on the upper limb, including all segments from the clavicle to the fingers. Under dorso-lumbar anæsthesia there were 52 laparotomies for conditions of the abdominal viscera (5 hydatid cysts of the liver, 8 gastro-enterostomies, 8 splenectomies); also 49 laparotomies in the inclined position for pelvic affections (35 hysterectomies); 70 cases

of the radical cure of hernia; and 43 operations on the lower limb. The age of the patients ranged from 1 year 9 months to 75 years. Chronic disease of the heart, lungs, kidneys, or liver formed no bar to success, but in infectious conditions, acute or chronic, the dose should be reduced. Spinal curvature, whether angular or lateral, presents no difficulty if the ligaments are not ossified. The writer has performed spinal anæsthesia with stovaine alone in 603 cases, and he and his assistants have employed stovaine and strychnine in 625 cases without a death or any serious complication during or after operation. He regards his method as suitable for all circumstances, infinitely superior to inhalation anæsthesia, and the method of the future.—*The M. R.*

Chronic Œdema of the Face and Mucous Membranes.

JAMES ADAM, M. A., M.D.—Chronic œdema of the face is not common, and, although Sir JONATHAN HUTCHINSON described it in 1883, its nature and treatment have not been sufficiently understood. In the two following cases the patient went to many doctors, specialists and hospitals, without benefit.

Case 1.—A joiner, aged 22, had suffered from the conditions for nearly 3 years. In 1902 scab formation began to trouble him at the orifice of the left nostril; in 1903 swelling began at the inner canthus of the left eye, and slowly increased, involving the cheek and side of nose. By his doctor's advice he had 6 teeth extracted. In 1904 he saw two specialists in Edinburgh.

In 1905, when seen by the writer, solid œdema extended from eye to mouth, and from the nose over the whole cheek. There was no pain or tenderness, but occasionally a feeling of heat and a red flush; the edges of the nostrils, especially the left, were covered with thick, hard crusts; the mucous membrane of the inferior turbinals was much thickened, and the right showed a growth like a small cherry, occluding the nostril. The soft palate and uvula were much thickened; adenoids were still present.

The writer regarded the condition as eczema of the nostrils, with a chronic erysipelatous process grafted on it. The treatment adopted was the removal of crusts in the nostrils with H_2O_2 , followed by application of $AgNO_3$ dissolved in sp. aeth. nit., and by Brooke's ointment; reduction of turbinal hypertrophy, removal of adenoids and tip of uvula; application of mercurial ointment to cheek, overlaid with cotton-wool and a firm elastic bandage; iodide and thyroid internally. After 2 months the œdema disappeared, and remains cured; there is still slight thickening of the soft palate and inferior turbinals.

Case 2.—A woman, aged 22, had had chronic œdema of the left cheek, upper lip, and the left lobule of the nose for 4 years, and had attended several hospitals. The œdema, especially that of the upper lip, was very disfiguring; crusts were found inside the left nostril, and an ulcerated groove down the centre of the mucous surface of the upper lip, due to the sharp and carious edges of the everted central incisors.

The treatment was similar to that in Case 1, but the lip proved somewhat obstinate, owing to difficulty in dealing with the teeth. The cure took 6 months. A culture from the labial fissure gave mixed staphylococcus and streptococcus; a vaccine was prepared, and 4 injections given at twelve-day intervals. The condition was improving by this time, and whether the injections had material influence is doubtful.

Sir JONATHAN HUTCHINSON, when he first described solid œdema of face, expressed the view that it was due to recurrent attacks of erysipelas, and of the same nature as elephantiasis. In 1888 he said that the condition in all typical cases ought to be symmetrical; if only on one side of the face, some local cause ought to be suspected; that the attacks of erysipelas which produce these conditions are in some cases frequent, and usually attended by great swelling; after each attack more and more deformity is left. "The treatment is the liberal use of tonics, and especially of steel, and the avoidance of sudden changes of temperature. If it occurs in early life I think it is generally outgrown in the end."

The writer points out (1) that the disease is local; (2) that the primary lesion is probably always one of a mucous membrane, or more usually of a mucous orifice; (3) that the œdema may affect the mucous membrane as well as the skin; (4) that the condition is curable. Erysipelas of the face in most cases starts from some fissure about the nose, less usually from about the eyes or ears; when frequently recurrent the nose ought always to be carefully supervised; in this way recurrence can often be prevented. In several of the published cases, as well as both of the writer's, there were crusts in the nostrils.

The essential point in treatment is to get rid of all septic foci; till this is done attempts to deal with the œdema are worse than useless. Crusts about the nostrils are best got rid of by H_2O_2 solution; the surface is then dried, $AgNO_3$ dissolved in sp. aeth. nit. immediately applied to fissures, followed by an antiseptic ointment. For the œdema the writer has used ung. hydrarg. co. covered with cotton-wool in thick layer, and pressed down by cotton elastic bandage, this only at bed-time. This treatment was continued for months, and was considered more important than the iodide or thyroid which were given internally.—*The M. R.*

Treatment of Hæmorrhoids by a Pessary.

RATKOWSKI.—Nævi and varicose veins may be successfully treated by constant pressure, but the application of this principle to the treatment of hæmorrhoids is rendered difficult by anatomical conditions. The extreme sensitiveness of the anal regions is the cause of the failure of most appliances, but this difficulty was largely overcome when Dr. LUTHER introduced his dumb-bell pessary. One sphere is introduced through the anus, the sphincter of which holds the thin, straight or curved isthmus, while the lower sphere anchors the pessary in place. The vessels of the mucous membrane are thus compressed by all three parts of the pessary. This instrument gained favour rather with the public than with the profession; it failed in consequence of faulty construction and its use in unsuitable cases.

The writer has introduced a modification which consists of a button-shaped upper lobe which is passed into the rectum. The slender isthmus expands below into a cone-shaped lower lobe. The upper lobe is smaller than in the old model, and while it is still large enough to remain *in situ*, its pressure on the neighbouring parts is lessened. The mucous membrane covering the internal sphincter is most sensitive; below this point the sensitiveness decreases, while the varicosity of the veins increases. Corresponding to these conditions, the isthmus is made very narrow above and wider below. The sphincter grasps the slender isthmus and both above and below is subject to the elastic pressure of 2 oblique surfaces. The cone is rounded off at its lower surface and is oval so as to escape inconvenience on sitting. By these means are avoided the drawbacks of the dumb-bell pessary and the irritation to the skin caused by substituting a small plate for the lower lobe. The pessary is made of light metal readily cleaned and proof against oxidation. No central channel for the passage of flatus is required. When the hæmorrhoids are painful and inflamed, and when there is ulceration or spasm of the affected area, the pessary should not be used till sedatives have rendered the tissues sufficiently tolerant. Best suited for this treatment is the torpid type with relaxation of the sphincter, constant prolapse of the mucous membrane, and dilatation of veins which readily bleed. An operation is often declined. When all other means of checking hæmorrhage have failed the pessary has proved successful. It prevents prolapse, compresses the dilated vessels, stimulates the lax sphincter to more powerful contractions, and promotes the growth of a healthy mucous membrane.—*The M. R.*

OBSTETRICS AND GYNÆCOLOGY.

Retention of Menses.

HENRY RUSSELL ANDREWS, M.D., B.S., M.R.C.P.—The only common cause of retention of menses is a septum in the vagina. This is usually just above the hymen, sometimes being apparently blended with the hymen, the so-called imperforate hymen, but may be higher. If the septum is across the orifice of the vagina the condition is easy to treat, but if it is higher there is difficulty in preventing contraction of the scar-tissue resulting from its incision or excision. This difficulty is greater when the obstruction is caused, not by a simple septum, but by a broad atresia, 2 in. or more, or even the whole of the vagina being absent. If the greater part of the vagina is free to become distended with the retained blood probably the uterus and tubes will be unaffected, but if there is not much or any room in the vagina, hæmatometra and hæmatosalpinx are likely to occur.

If the septum is low the treatment is simple, provided that the retained blood is only in the vagina, as it is in the majority of such cases. The vagina is capable of such great dilatation, that any distension of the uterus or tubes is comparatively rare. Abdominal examination, if necessary under anæsthesia, shows that the uterus, not enlarged, is perched on top of the swelling formed by the distended vagina. The treatment is free incision through the septum with antiseptic precautions. If the septum is thin and membranous a simple incision is usually enough, but if it is thick and skin-like a crucial incision followed by snipping off the corners will be necessary to make a permanent opening. It is seldom necessary to apply sutures or ligatures for bleeding. The retained blood, usually coppery or chocolate-coloured and tarry in consistence, is sometimes under considerable tension, and may be ejected with force if the patient strains. When it ceases to flow freely the vagina should be swabbed out, and the patient should be put back to bed with an aseptic dressing over the vulva. There is no objection to washing out the vagina at once if the uterus is not distended.

A girl, aged 17, was admitted complaining of a heavy bearing-down pain for 5 days. For 4 days she had noticed an abdominal swelling. She had not menstruated.

A large swelling was felt rising out of the pelvis, rather more on the left side than the right, reaching to the umbilicus. It was tender and slightly movable. Just above the hymen a thin septum bulged down into the vulva like a ripe plum. Under anæsthesia the body of the uterus, of normal size, could be felt perched on the top of the swelling.

The septum was incised freely, and about $1\frac{1}{2}$ pints of dark chocolate-coloured fluid escaped. The vagina was swabbed out, and a gauze pad was applied to the vulva. Douches of saline solution were given for the first few days. No pain or pyrexia followed the operation.

It is remarkable that there was so little pain with so large a quantity of retained blood. A history of monthly attacks of pain is not uncommon. Some patients notice that the abdominal swelling increases during the attacks of pain, and diminishes in the intervals. A hæmatocolpos containing a pint or more of fluid not infrequently causes difficulty in micturition or even retention of urine. The main points in the treatment are to make a permanent opening and to prevent infection. In the two following cases an insufficiently free opening was made and decomposition of retained fluid occurred.

A girl, aged 16, had complained of pain in the lower abdomen for about a year. Seven weeks before admission she was operated on at another hospital for retention of menses, the septum being perforated by a trochar. Since then she had had an offensive vaginal discharge.

Per vaginam a transverse septum was found about an inch above the vaginal orifice. In this septum was an opening which admitted a good sized catheter. A crucial incision was made through the septum, opening up the vagina freely, and much foetid pus escaped. The vagina above the septum was much distended. A large tube was inserted and the vagina was douched out daily. For the next 4 weeks there was irregular pyrexia and some abdominal pain. The patient eventually did well.

If the septum is higher in the vagina simple incision or even excision will not make a permanent opening. Even though the operator may be able to insert two or three fingers into the upper part of the vagina at the time of the operation, the raw surface will contract down in a few weeks so that only a narrow opening is left, possibly too narrow for the escape of blood. Some of these patients wear some form of vaginal pessary, removal of which for cleansing and reinsertion causes much pain and distress. A better method of preventing cicatricial contraction is to graft the raw surface.

A girl, aged 14, who had been treated for hæmatocolpos elsewhere 3 months before, was admitted to hospital. She had been well until a month before, when she began to complain of severe colicky pain in the lower abdomen, which gradually grew worse. She had not noticed any swelling, but on examination a rounded, tense, elastic swelling was found in the right iliac fossa. A septum about $\frac{1}{2}$ in. thick was found in

the vagina about $1\frac{1}{2}$ in. above the orifice. This septum was perforated by a pair of forceps and a large quantity of tarry blood escaped. For the next fortnight there was some discharge of blood, but after this there was no further discharge. She had complained of severe abdominal pain for ten days and of a feeling as if something was trying to force its way out of the vagina.

A tense, rounded, smooth swelling was felt to the right of the middle line, reaching up to just above the pubes. Per rectum a large cystic swelling was felt practically filling the pelvis. Per vaginam a septum was felt about $1\frac{1}{2}$ in. above the orifice, and above this was a cystic swelling of the size of a foetal head. Perched on top of this swelling could be felt the uterus, of normal size. The writer steadied the septum with forceps and excised it with scissors, evacuating a large quantity of blackish-red viscous fluid. The cervix was normal. A glass tube was inserted into the vagina and the cavity was irrigated with tincture of iodine and water. Three weeks later the lumen of the vagina where the septum had been was not larger than the thickness of a penholder. The writer dilated it and sewed over the raw surface a portion of vaginal mucous membrane, removed by colporrhaphy from another patient. A glass tube was inserted to help to keep the graft in place. This tube was removed a week later, when the graft had effected good union. Although such grafting may prevent contraction to such an extent that menstruation and even sexual intercourse may be possible, it is doubtful whether it would be safe to allow natural labour to occur. It would be safer to perform Cæsarean section rather than run the risk of severe vaginal laceration.

The following is an unusual case of retention of menses:—

A girl, aged 18, was admitted. Up till 2 years before the bowels were open daily. Lately they have been open much less frequently, sometimes only twice in a fortnight. For 2 years she has had abdominal pain, on and off, lasting sometimes for a week, sometimes for one day. The pain has had no relation to the menstrual periods. There has been no vomiting. She has had headaches frequently. During the last few weeks there has been difficulty in micturition. Menstruation was regular; it began 2 years before and lasted 2 or 3 days. The amount lost was normal. The last period was 2 weeks before.

She was stout and well-developed. A large, tense swelling extended from the pubes to the umbilicus, occupying the whole of the middle of the abdomen. It was movable from side to side, tender, dull on percussion and did not fluctuate. The patient had been aware of this swelling only for about 6 weeks, during which time it had increased in size

rapidly. Per rectum a large, round, cystic swelling was felt, practically filling up the pelvis. There was a small, harder portion of the tumour near the umbilicus. The vaginal orifice admitted one finger. A cystic swelling, filling the pelvis, bulged, the wall of the vagina on the right side downwards. The whole of the vaginal wall could be felt on the right side, but on the left was an angle between the swelling and the left vaginal wall into which the finger was not long enough to penetrate. The cervix could not be felt. The writer thought that the tumour was a rightsided broad-ligament cyst burrowing down deeply into the base of the broad ligament.

Mr. Rigby opened the abdomen. The tumour was a large red cystic swelling. Attached to the upper part of the left side was a uterus, normal except that it was elongated. The writer incised the swelling, which was bulging into the vagina, from below, and let out a large quantity of thick, discoloured blood. Meanwhile Mr. Rigby found that while the left Fallopian tube was normal the right was distended to the size of a sausage. He removed this, leaving the ovary. The right half of the uterus sank lower down and became much diminished in size. A large rubber drainage tube was inserted into the distended uterus from below, and the abdominal cavity closed. The tube was removed 4 days later. Good recovery followed. Three weeks later the left cervix was in the normal position. The opening that had been made was at the right side of the vaginal vault. The finger, pushed in through it, went into the cavity of the body of the right half of the uterus, there being no appreciable constriction to mark the junction of body and cervix.

There was a single vagina and double uterus. The left uterus had been menstruating normally, but there was no communication between the right uterus and the vagina. Consequently the right uterus and the right Fallopian tube had become distended with retained menstrual blood. The diagnosis was difficult because the history of regular and painless menstruation prevented that of retention of menses being entertained. The writer thought that the intra-pelvic signs were unusual for a burrowing broad ligament cyst, but had no suspicion that there was a double uterus. Possibly the small firm mass at the summit of the tumour ought to have suggested this.

When it is certain or probable that the uterus or tubes are distended with blood it is dangerous to let out the fluid from below without opening the abdomen. If the tubes are dilated they are probably adherent, and the alteration in their position caused by evacuation of the blood retained in the upper part of the vagina and uterus would be likely to cause rupture into the abdominal cavity.

A girl, aged 17, was seen. For 3 or 4 months she had complained of cramp-like pains in the lower abdomen. She had not menstruated. A large swelling rose out of the pelvis, reaching almost to the umbilicus, freely movable from side to side. At the summit was a mass of harder consistency. On the right side of the main swelling was a separate tumour in the right iliac fossa. There was no vaginal orifice. Per rectum a cystic swelling was felt, extending down to within about 2 in. of the vulva. A catheter in the urethra was felt plainly by the finger in the rectum.

There was evidently occlusion of the lower part of the vagina, with retention of menstrual blood in the uterus and upper part of the vagina. Probably the right Fallopian tube was distended with blood.

Laparotomy showed that the uterus and upper part of the vagina were distended with blood. It was difficult to say where the hæmatometra merged into the hæmatocolpos. The right Fallopian tube was distended with blood to the size of a small pear, and adherent to a small ovarian cyst. These were removed. The left tube and ovary were healthy. All the contents of the abdomen were stained with blood, which had evidently leaked out of the abdominal ostium of the left tube. As the left ovary and tube were healthy, the writer was unwilling to remove the uterus. He covered up the abdominal wound, put the patient in the lithotomy position, and made an incision between the anus and urethral orifice; then dissected upwards between the rectum and urethra with his fingers and blunt-pointed scissors until he reached the dilated upper portion of the vagina. About 2 pints of blackish, thick, treacly blood escaped. Meanwhile he looked inside the abdomen to see that no blood escaped into its cavity from the left Fallopian tube. The vagina was douched out, the abdominal wound was closed, and the vagina was drained with gauze. This was removed next day and a large rubber tube was inserted in its place. Eleven days later an attempt was made to draw down the vaginal walls and suture them to the skin of the vulva. There was so much tension, however, that it was necessary to dissect up 2 flaps from the skin and mucous membrane of the vulva and to tuck these into the vagina, when it became possible to cover all the raw surface. The vagina was packed with gauze, which was removed a few days later, a glass tube being inserted. When she was discharged the vagina was entirely lined by mucous membrane or skin, but rather narrow at its lower part. The further history is unknown.

Some authorities would say that the uterus, should have been removed, and others would go so far as to remove the left ovary as well. This patient cannot have a normal labour if she becomes pregnant, but the

writer preferred not to unsex her, to give her a chance of marriage, and to perform Cæsarean section if she becomes pregnant, rather than to remove a healthy uterus, ovary and tube, and make maternity impossible. It is interesting that blood which had escaped from the left Fallopian tube into the abdominal cavity did no harm. There were no adhesions.

In the following case there was not only total absence of the vagina, but also complete atresia of the cervix—a very rare condition :—

A girl, aged 17, had never menstruated. For 2½ years she had had pain in the abdomen, back and legs every month. This pain has been very severe lately and lasted for a fortnight at a time.

Two swellings were felt, one hard and elastic, above the right Poupert's ligament, the other, cystic and about the size of a foetal head, in the umbilical region. Just behind the urethral orifice was a small dimple, but there was no vaginal orifice. Per rectum there was no evidence of hæmatocolpos.

Hæmatometra and hæmatosalpinx were diagnosed. The abdomen was opened, and a large left hæmatosalpinx was removed with a small ovarian cyst adherent to it. The right tube was also distended with blood. It was removed and an attempt was made to save a portion of the right ovary. The body of the uterus was enlarged and elastic, evidently containing blood, so it was removed. This part of the operation was difficult as the cervix was adherent to the bladder, and an indurated finger-like mass ran from the cervix to the right side of the pelvic wall, adherent to the ureter and to the iliac vessels. In separating this indurated mass from the iliac vessels a little old tarry blood escaped. No trace of vagina could be seen or felt. The raw surfaces were covered with peritoneum and the abdomen was closed. The pulse was rapid and the temperature raised from the next day onwards, and death occurred the eighth day after the operation, apparently from peritonitis. No necropsy was allowed. The termination was disappointing, as she was expected to do well, and the peritonitis could not be explained.—*The M. R.*

Deprivation of Salt in the Urinary Disorders of Pregnancy.

OSKAR JÆGER.—Though CRAMER's recommendation to treat simple œdema of pregnancy by abstention from common salt has been opposed on the ground that in the simple anasarca of pregnancy without albuminuria no retention of salt in the body occurs, the consensus of opinion at the last German Congress of Internal Medicine was in favour of treating cases of nephritis accompanied by œdema by this method. In a patient of WIDAL's the œdema could be removed or produced at will, respectively,

by giving a diet without salt, or by the addition of 10 to 12 gm. of NaCl daily. In nephritis gravidarum there is usually marked œdema with reduction of excretion of NaCl. Hence, though views differ as to the nature and importance of this retention of NaCl, the treatment by deprivation of salt is rational. The following rules as to diet are useful.

To be avoided are all foods which contain a high percentage of salt when raw, or which, when cooked, are unpalatable without the addition of salt. Meat and meat extracts, such as beef tea, are thus prohibited. The simplest form of diet containing but little salt is cow's milk, which contains only about 0.15 to 0.18 per cent. of NaCl. The necessity of administering large quantities of fluid with a milk diet is, however, a disadvantage when the kidneys are diseased, as is also the repugnance which is frequently provoked by milk. The necessary quantity of albumin may be given as egg-albumin. Thus poached eggs, omelettes, etc., are permissible if eaten without salt. Many take sugar with these egg foods. Butter may be eaten freely, but must be unsalted. Carbohydrates may be given as rice, sago, potatoes (especially baked), puddings, mucilaginous drinks, and a small amount of white bread. The most suitable vegetables are cauliflower, green peas, mushrooms, and carrots, all of which are poor in salt. They may be rendered nutritious if taken with sauces containing flour and large quantities of butter. All sorts of raw and cooked fruit are allowed. Permissible drinks are water, lemonade, malted coffee, weak tea, and milk. The patient should be regularly weighed, to guard against malnutrition.

The writer has had gratifying results with this diet, during pregnancy. Thus in cases of nephritis the œdema and percentage of albumin may frequently be reduced so as to avoid the necessity of provoking premature labour and to obtain a viable child. In the most severe cases of nephritis gravidarum, though the symptoms may improve, complete *restitutio ad integrum* of the damaged kidneys does not occur until after parturition. In other cases again this, like every other form of conservative treatment, fails. If in spite of dieting the general condition deteriorates, the blood-pressure rises, the œdema, albuminuria, and the number of casts increase, hæmaturia occurs, and there are retinal changes, it is unsafe to postpone the induction of premature labour as eclampsia may occur at any moment. But before resorting to this, reduction of fluids should be tried in conjunction with a salt-free diet. In some apparently hopeless cases this may be followed by enormous diuresis and improvement of the general condition.

If eclampsia is present, no time should be lost in effecting delivery. During the puerperium a salt-free diet should be given. The results

depend on whether the patient is a primipara or multipara. If the former, recovery with complete disappearance of albuminuria usually occurs within a few days. If the latter, improvement occurs up to a certain point, but some albuminuria and casts frequently persist.

Satisfactory results were also obtained with a salt-free diet in the pyelitis and cystitis of pregnancy. The diet is unirritating and less monotonous than milk alone. —*The M. R.*

OPHTHALMOLOGY.

The Causes of Dilatation of the Pupil.

POULARD.—The iris contains two sets of muscular fibres, one of which surrounds its free border like a sphincter and by its contraction closes the pupil while the other radiates between the free and attached borders of the iris and when contracted dilates the pupil. The circular fibres derive their nerve supply from the oculo-motor or third cranial nerve, while the dilator of the pupil is under the nerve control of the sympathetic. Dilatation of the pupil may therefore occur either from paralysis of the third nerve or excitation of the sympathetic-paralytic and spasmodic dilatation, respectively. These may be easily distinguished clinically by the fact that the pupillary reflex to light is abolished in the paralytic form, while in the spasmodic variety it persists.

Advancing age affects the accommodation but has no action on the movements of the pupil, so that dilatation is always pathological. It may be due to an affection of the globe such as glaucoma or injury, and it also occurs in binocular blindness, but such conditions give rise to no difficulty in diagnosis. Certain drugs cause paralytic dilatation of the pupil, such as atropine, homatropine, duboisine, daturine, hyosciamine and scopolamine, while cocaine causes spasmodic dilatation. Chloroform at first produces spasmodic dilatation with presence of the reflexes; later contraction of the pupil from paralysis of the sympathetic; still later, in the case of overdose, the approach of death is preceded by dilatation from paralysis of the oculomotor, the reflex being absent. In certain general affections, particularly syphilis, paralytic dilatation of the pupil may occur, either alone or with implication of the ocular muscles. Certain toxic conditions (botulism) also cause paralytic dilatation, but diphtheria while often affecting the accommodation, usually spares the pupil.

The most important causes of mydriasis are diseases of the nervous system. Excitation of the cervical sympathetic by compression causes spasmodic dilatation of the pupil, often accompanied by exophthalmos, and pallor and coldness of the same side of the face. Pressure on the third nerve causes paralytic dilatation in the same way. Many systemic

diseases, especially those related to syphilis, such as tabes or general paralysis, are frequently accompanied by paralytic dilatation of the pupil. In such conditions as meningitis, tumour, or abscess of the brain, dilatation of one pupil, or of both pupils unequally, is a sign of great value. Bilateral spasmodic dilatation is present in many varied conditions, such as neuroses, hysteria, epilepsy, certain mental diseases, during periods of excitement, uræmic convulsions, lead colic, attacks of dyspnoea or of vomiting. It also occurs in pathologic stimulation of peripheral sensory nerves as in neuralgia about the head or hemicrania.

Paralytic dilatation of the pupil is much more frequent and serious than spasmodic. When not due to an affection of the globe or a mydriatic, it indicates, even when alone, a more or less grave condition of the nervous system. A search should be made for an organic nervous affection, such as tabes or general paralysis, or a cerebral lesion such as meningitis or tumour of the brain. Should no nervous affection be discovered it should be remembered that syphilis, even soon after its onset, may produce dilatation of the pupil apart from any other concomitant nervous affection. In 9 cases out of 10 paralytic dilatation of the pupil is due to syphilis or its sequelæ, such as tabes or general paralysis.—*Ibid.*

OTOLOGY.

Reflex Nystagmus from Wax in the Ear.

P. SEBILEAU and F. LEMAITRE.—A man, aged 41, had a large mass of cerumen impacted in his left auditory meatus. For some months he had suffered from vertigo on introducing an ear-pick into the left ear. Since then during mastication, laughter or yawning, slighter degrees of vertigo were liable to occur, but this symptom was most easily produced by slight pressure by the finger on the left auditory meatus. When this was done, surrounding objects seemed to turn round him, while at the same time short and rapid horizontal nystagmic movements appeared in the left eye, and were followed by a tendency for the patient to fall backwards if unsupported. When the pressure in the ear was more gentle and limited the movements of the eye were less rapid and extensive, and on slight but constant pressure a single slow movement of the eye might be provoked, as if it was repelled by the probe introduced into the meatus. After removal of the mass of wax a slight degree of nystagmus was noted on the right side when the patient looked to extreme right. No lesion of the eye or internal ear was detected. The writers attribute the nystagmus to the pressure on the endolymph through the fenestrum ovale by the plug of cerumen, and think it is produced in the same way as nystagmus may be, by mechanical pressure through a pathological aperture in the external semicircular canal.—*Ibid.*

THE ANTISEPTIC.

JANUARY, 1910.

Racial Distinctions in the Medical Profession.



OUR contemporary of the *Medical Times* draws attention to the "Position of Native Doctors in West Africa" as disclosed by the report of a Departmental Committee appointed by the Secretary of State for the Colonies. The members of the Committee were Mr. H. J. REED, C.M.G. (Colonial Office) Chairman; Mr. T. THOMPSON, C.M.G., M.D. (Local Government Board); Mr. W. H. LANGLEY, C.M.G., F.R.C.S.I., (Principal, Medical Office, Gold Coast); Mr. J. K. FOWLER, M.A., M.D., D. Sc. (late Dean of the Faculty of Medicine, University of London, and Senior Physician, Middlesex Hospital); Mr. A. FIDDIAN (Colonial Office), and Mr. H. C. W. VERNEY (Colonial Office).

The Committee's conclusions were as follows:—

"The Committee find that the witnesses who had local experience were practically unanimous in deprecating the appointment of natives of West Africa or of India to the West African Medical Staff. On this matter the Committee desire to express their concurrence in the views stated in paragraphs 20-23 of the Report of the Committee appointed to discuss a scheme for the amalgamation of the medical services in the West African Colonies and Protectorates [African (West) No. 674]. They think it, however, desirable to add that the question of the employment of West African natives as a Subordinate Medical Service on the lines of the Indian Subordinate Medical Service deserves consideration. The question is one which might fitly be referred in the first instance to the Conference of Principal Medical Officers suggested in paragraph 17."

In Appendix III, the Committee express their views as to the employment of native doctors in West Africa and in India, even although educated in Great Britain, and taking, with highest honours, degrees and

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diplomas after examination at Universities and Medical Colleges in the United Kingdom, as follow:—

"20. The Committee are strongly of opinion that it is in general inadvisable to employ natives of West Africa as medical officers in the Government service. They regard it as the duty of the British Governments in West Africa to provide the best medical assistance in their power for their European employes, especially when stationed in the bush or at out-stations; and they do not believe either that in professional capabilities West African native doctors are on a par, except in very rare instances, with European doctors, or that they possess the confidence of European patients on the Coast. Social conditions, particularly in Southern Nigeria, where European officers live together and have their meals in common under the "mess" system, and in Northern Nigeria, where a large proportion of the European staff consists of officers of the regular army, make it extremely undesirable to introduce native medical officers into those Protectorates. They have already been tried in Southern Nigeria without success.

21. It is possible that in a few isolated cases, *e.g.*, at hospitals, where the patients are always or practically always natives, it may be desirable to employ a native doctor, but such cases may be regarded as exceptional, and may be left to the discretion of the local Governments.

22. As regards natives of India, the Committee are, for similar reasons, not in favour of their employment, although they are not in a position to advise so definitely on this point, as the experiment has scarcely yet had sufficient trial.

23. In any case the Committee are certainly of opinion that if natives either of West Africa or of India are employed, they should be put into a separate roster, that they should not be employed on military expeditions, and that European officers should in no circumstances be placed under their orders."

Commenting on this report our contemporary of the *Medical Times* remarks:—

"We can well understand that the native doctors are indignant at being classed as unworthy to be employed professionally in attending to persons of European extraction, and we must confess that we blush to know that English medical men could attach their signature to such opinions as those above quoted. We feel sure that these views are not justified either as regards the professional abilities of the native medical

men or as to the feelings of Europeans generally who may need the services of a medical man. They may represent the views of those who are admitted to the 'mess,' but in the name of common sense and common justice let us ignore these contemptible sentiments and those who father them. It is the expression of these opinions, once universally held by those who represented British power in India and Africa, that has done so much to make Englishmen disliked. No wonder we were nearly driven out of Africa within recent times and that there is so much disaffection in India. In another part of to-day's issue of the *Medical Times* we reproduce the views of the *Sierra Leone Weekly News*, which is the leading newspaper in West Africa. The subject is dealt with most temperately, and we hope it will attract attention in the highest quarters. In their own countries African and Indian medical men who have qualified in Great Britain or Ireland should at least stand on as good a footing as those of British ancestry. They may fairly claim this, and we shall do all we can to ensure that it is conceded to them."

The remarks of our contemporary are such as one expects from straightforward Englishmen with their ingrained love of justice and fair play. But the stay-at-home Englishmen must allow a fair margin for deterioration in their fellow countrymen who have had to spend long years in semi-civilized or savage surroundings. The witnesses examined by the Colonial Office Committee were all medical men who had served in the Public Medical Services in Africa, India or other British possessions. And long residence in Tropical climates is apt to produce in Englishmen not only Hepatic changes but also cerebral changes. As we are more accustomed to this Tropical Cerebral Degeneration in Europeans than our contemporary of the *Medical Times* we are less surprised at the conclusions arrived at by the Committee. We must also confess that we are not altogether sorry for the decision arrived at, because it will prevent Indians going to West Africa. West Africa is not an ideal place for any one to settle down, and India needs all the medical men whom she can produce. To attend to the medical needs of over 300 million people an enormous number of medical men will be required. As yet, comparatively few Indians have turned their attention to the study of medicine. The more flashy pursuit of law has allured many. If some of our lawyers seriously think of settling down in West Africa to practise their profession we shall welcome their decision. But medical men we cannot spare. That is the reason why we say that in a way we are glad that qualified Indian medical men will not be entertained in the Medical Service of British West Africa. We only wish that the Committee had omitted from its report certain statements which might give

offence in certain quarters. When sweeping statements are made of the professional capabilities of native doctors, younger professional men, both Indians and Africans, might get unnecessarily irritated, and the foundation might be laid of deep-seated race hatred. Older professional men like us know that such sweeping generalisations are only 'Pretty Fanny's way.' Indians who have started with a severe handicap in competition with English doctors and beaten them will only laugh at heroics such as are found in the Committee's report. But why give unnecessary offence to the younger generation? They are more impulsive and nurse the sense of an injury inflicted on them, even though it may be a trivial one, very tenaciously and become very fertile sources of what is commonly called unrest. The Colonial appointments are filled up by nomination by the Secretary of State for the Colonies. There is no competitive examination. And what is more, as Lord Melbourne once said about the Order of the Garter, "there is no d—n question of merit about it." Then why not simply nominate Englishmen for all Colonial appointments and say nothing more about it?

That would have been just as effective and would have given less offence. We are, however, very much obliged to our contemporary of the *Medical Times* for the encouraging words it has said about Indian and African medical men. That is the proper view to take of the matter. And our advice to medical men in India is to work strenuously for the advancement of their profession and the interests of their patients and to take no notice of what others say about their racial disabilities. Science is not Anglo-Indian. It is Cosmopolitan. Serve it honestly and faithfully, and it will stand by you. Leave wranglings and political discussions to lawyers.

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Canadian Practitioner and Review. The Australasian Medical Gazette. The Caledonian Medical Journal. The Montreal Medical Journal. The Louisville Monthly Journal of Medicine and Surgery. The Monthly Cyclopædia of Practical Medicine. The Buffalo Medical Journal. The Ophthalmoscope. The Dental Era. The Interstate Medical Journal. The Medical Notes and Queries. The Calcutta Medical Journal. Folia Therapeutica. The All-India Hospital Assistant's Journal. The New York State Journal of Medicine. The International Therapeutics. The Hospital. The Medical Review. The Medico-Surgical Journal. The Journal of the Out-Door Life. Bulletin Journal of the New Animal Therapy.

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Original Articles.

* SUBJECTIVE SYMPTOMS IN EYE DISEASES.

BY

E. LUCAS HUGHES, L. R. C. P. (LOND.) M. R. C. S. (ENG).

Fellow of the Royal Institute of Public Health; Late Ophthalmic Surgeon to the Hope Street Hospital, Liverpool, England.



HE subjective symptoms met with in eye diseases may conveniently be classified as follows.—

1. Pain, which varies in intensity from severe agony to merely a feeling of discomfort. Photophobia is an allied sensation to pain and may be reckoned along with it.
2. Diplopia.
3. Subjective visual defects, such as are termed Myodesopia, Metamorphopsia, &c.
4. Vertigo.
5. Defects in the visual fields.
6. Light, Sense and Colour abnormalities.

Pain is of the greatest importance as a subjective symptom for two reasons : one is because it is often the first indication that anything is wrong, and it is also of the greatest value to the Surgeon in differential diagnosis; the character, mode of onset, &c., being taken into consideration in any given case. It does not, however, necessarily follow because pain is referred to the eye-ball that we have to do with any organic disease of the eye itself. Cases of Migraine and other functional troubles of an allied character, besides the various forms of Neuritis, obstinately

* Specially contributed to *The Antiseptic*.

refer their pain to the eye-ball, but even after repeated and thorough examinations of the eye itself have been made, no defect in the eye can be discovered.

Pain of the eye may conveniently be divided into—

1. Pain from inflammatory causes.
2. Pain from causes that are non-inflammatory.

(a) *Inflammatory pain* should be considered according to the anatomical part or parts of the eye affected.

In Conjunctivitis, the characteristic pain is described as being like "grains of sand" in the eye, and it is of a burning, smarting, itching nature.

In Episcleritis and Scleritis, there is not much pain, as a rule, but what there is, is usually described as a hot, tight, burning sensation.

In Keratitis, the pain is generally very severe, even although the lesion is insignificant. Indeed the pain is often in inverse ratio to the amount of, or degree of the actual lesion, so that a severe injury may be neglected by a patient simply because the pain has from the first been slight, whereas a slight injury with severe pain causes the patient to seek immediate advice. What a blessing pain is to the doctors!

The character of the pain is of great assistance in the well-known difficulty between the differential diagnosis of some cases of Glaucoma and Iritis.

The pain in Iritis is in the eye-ball; and it is of a sharp cutting, aching or throbbing character: it radiates into the brow, the side of the nose, and down into the jaw and gums. On the other hand, the pain in Glaucoma is at the back of the eye-ball and is intensely severe, indeed often agonising. The pain is also felt in the forehead and on the top of the head.

Severe vomiting frequently accompanies the pain of Glaucoma, and this may cause the case to be mistaken for "a bilious attack" by the unwary practitioner.

Another instance of pain being of great help, as to its character, is in the differential diagnosis of a slight Iritis and a case simply of Conjunctivitis. The character of the pain is the great indication. It is that which should most appeal to us in making a diagnosis.

Another thing which is very helpful, in considering the pain, is the time of its onset; whether the pain comes on after using the eye, or whether it has come on immediately after some injury to the eye, &c.

Whenever possible, or as far as possible, an exact localization of the seat of the pain should be made. A good example of information derived from the mode of onset of a pain, as well as its exact situation, is that observed sometimes after a cataract extraction. After the operation, during the first 24 hours or so, a pain comes in the eye, which is described as a dull aching "feeling of pressure" pain. The clue is at once given by this pain; it is due to one of two causes, either the bandage is too tight or else there is an accumulation of tears under the lids, which have become stuck together. Lifting up the bandage and gently pulling down the lower lid will at once relieve the pain in the latter case, and, of course, loosening the bandage in the former. The fluid is allowed to escape, and the pressure causing the pain is relieved.

The pain suggesting Iritis after cataract extraction, occurs about the fourth or fifth day after the operation. It is the characteristic pain of Iritis, and is of a sharp cutting character, radiating as described under Iritis. Because of its radiating character, the pain of Iritis is often spoken of as Neuralgia by patients.

Pain along with photophobia and lachrymation occurs as the onset of sympathetic ophthalmia.

In cases of Optic Neuritis, deep seated pain only occurs where there is some orbital affection. Pain, except as a symptom of Glaucoma, is not characteristic of any deep seated disease of the eye; in fact we must trust to the ophthalmoscope in making our diagnosis of choroidal, retinal and optic nerve changes; subjective symptoms are here of no use.

(b) *Non-inflammatory pain* characterizes Herpes Zoster Ophthalmicus: but the diagnosis can hardly be made or only guessed at before finding the characteristic vesicles. It is a severe neuralgic pain along the supra-orbital division of the fifth nerve of one side and occasionally the other branches are involved, namely the nasal and the infra-orbital branch. This intense pain precedes the eruption and lasts a variable time, from a few hours to as many weeks or months. It subsides when the eruption comes out. Non-inflammatory pain also occurs in purely neuralgic cases and in cases of hysteria.

Photophobia, like pain, characterizes most of the inflammatory diseases of the eye, especially the superficial ones and in the acute forms. It varies in degree from absolute photophobia associated with blepharospasm, in certain forms of Keratitis, to the slight discomfort caused by bright light in cases of retinal hyperæmia and eye-strain. It is analogous to pain, being, indeed, a special sort of pain, that caused by light, and bears the same relation to pain that sight does to ordinary sensation.

When there is photophobia there is nearly always lachrymation, because this special perverted sensation acts reflexly upon the lachrymal glands. Photophobia often occurs with ciliary neuralgia.

Diplopia is another important subjective symptom of eye disease. It is always the symptom *par excellence* of Ocular Paralysis and bothers a patient with this trouble excessively, so much so that he will invariably resort to the wearing of a shade, generally a celluloid flesh coloured one, over the eye that has the paralysed muscle or group of muscles. One does not need the patient to speak; if he walks into your consulting room with an eye shade on removal of which no inflammation and a more or less marked squint is seen, we know at once there is diplopia and ocular paralysis. Sometimes the squint is not very apparent although the diplopia bothers him greatly, and then the case has to be carefully worked out to know what muscle or groups are affected, the lesion that causes the paralysis and the cause of the lesion. Diplopia is not only important to the patient from his point of view because of the discomfort it entails, but it is of the greatest importance to the surgeon as it forms the chief factor for guiding him to a precise and certain diagnosis of the muscle or muscles affected. Monocular diplopia is of very little importance as a subjective symptom because there are nearly always other more important objective symptoms that account for it, such as for instance, a double pupil, the presence of a dislocated lens, etc., and the diplopia, under consideration as the subjective symptom that points to ocular paralysis, is binocular. The two forms of diplopia that occur in this trouble are termed homonymous and heteronymous (crossed) diplopia. Homonymous is double vision where the false or second image is mentally projected by the deviating eye to its own side, or in plainer language, it is seen by the squinting eye on its own side. Heteronymous is the opposite to this, the false image is seen by the squinting eye on its opposite side, that is to say supposing the left eye squints the false image is mentally projected to the right side. The false image is always the image of the eye that squints. Convergent squint-deviation of the eyeball inwards, always has the homonymous form of diplopia and divergent squint-deviation of the eye ball outwards always has the heteronymous (crossed) form of diplopia. When the deviation is in an upward direction the false image is below, and when it is in a downward direction it is above. False projection is the reason for binocular diplopia. (For a more detailed account of this interesting subjective symptom I must refer the reader to my work on Squint and Ocular Paralysis, recently published by Mr. H K. Lewis, Gower Street, London, England).

3. *Subjective visual defects*, such as are termed Myodesopia, Metamorphopsia, etc.—Some of these subjective visual sensations and defects are associated with serious disease of the eye, whilst, on the other hand, some are of no very great clinical significance. Take for instance those termed Myodesopia or Muscæ Volitantes. I have examined over and over again patients complaining of seeing disagreeable and annoying motes floating before their vision, but almost invariably fail to detect by the ophthalmoscope the slightest abnormality. If there are any opacities in the vitreous they will be detected by using a plane mirror and not too bright a light and by making the patient move his eye about. The subjective sensation of these motes is that they are mobile like floating opacities in the vitreous; they never amount to positive scotomata. The explanation generally given of them is that they are embryonic cells or remains of embryonic tissue persisting in the vitreous, transparent enough or too small to be noticed by the observer with his ophthalmoscope but opaque enough to cast shadows on the retina and thus annoy the patient so long as he notices them. A very good way of detecting quite small opacities by means of the ophthalmoscope, if they can be detected at all, is to use a + 10 lens in the instrument and to examine by the direct method. These "muscæ volitantes" (motes fluttering or floating about) cause nervous patients the greatest annoyance. The best thing is to assure them that there is no ocular disease, that they must patiently and persistently try and ignore them, and with careful attention to the general health, the avoidance of indigestible food, etc., the condition will pass away and become forgotten. The laity often attribute these motes to biliousness and indigestion, and it is as well to let them think so rather than let them be worried with the wrong idea of having serious ocular disease.

Metamorphopsia, on the other hand, is a serious subjective sensation, for it means one or other of two grave conditions, either choroiditis or detachment of the retina. The retina being pushed forward by the disease and its elements displaced from their normal situation, objects whose images fall upon the retina appear distorted, lines for instance appear bent, everything is crooked, distorted, untruthfully conveyed to the patient's brain. Micropsia is where objects appear smaller than they really are. This visual defect occurs in choroiditis. Sensation of light, spots and balls of fire before the eye suggest irritation of the retina (photopsiæ) and these occur when inflammation of the retina and choroid is commencing or is quite recent. They cause the patient extreme annoyance and anxiety. They occur along with scotomata, i.e., areas of the field of vision where sight is entirely abolished.

It is at the beginning of a case of detachment of the retina that metamorphopsia and photopsia occur.

4. *Vertigo* occurs in cases of paralytic squint chiefly as the result of two other symptoms—*viz.*, diplopia and false subjective orientation. "It is designated visual or ocular vertigo, so as to distinguish it from auditory and other forms of giddiness. It occurs almost as much when the paralysed eye is alone performing the function of vision as when the two are uncovered and there is diplopia. Objects seem to move as the affected eyes move in the direction of the paralysed muscle. The patients become unsteady and timid, and often experience a feeling of nausea."—(*Squint and Ocular Paralysis*, page 136.)

5. *Defects in the Visual Field*.—This is much too large a subject for more than a passing glance. Blindness itself, total absence of the visual field, is a subjective symptom of eye disease, and the defects vary from total blindness (amaurosis) to a slight limitation concentrically of the visual field or a small scotoma. The defects may be due to serious disease or they may be cases of hysterical amblyopia.

6. *Light Sense and Colour Abnormalities*.—This also opens up a very big field, and in a paper of this kind only a few passing remarks can be made. The chief colour abnormality of importance occurring as a subjective sensation in eye disease is the detection of a colour scotoma for red in commencing optic atrophy in cases of tobacco amblyopia. Indeed a small portion of the visual field near the blind spot where red and green cannot be seen by the patient is regarded as pathomononic of poisoning of the eye by tobacco; this with diminished visual acuity constitutes tobacco amblyopia.

* TREATMENT OF PLAGUE.

BY

DR. JOGENDER LAL CHANDRA, L.M.S.

Late Professor of Anatomy, College of Physicians and Surgeons, Calcutta.

Plague, or "Mohamurrie" as it is called in India, is an acute infective febrile disease caused by a micro-organism, the *Bacillus Pestis*. Plague may be conveniently divided into two forms:—

- I. Pestis Major.
- II. Pestis Minor.

* Specially contributed to *The Antiseptic*.

The former is again sub-divided into

1. Bubonic.
2. Septicæmic.
3. Pneumonic types.

As regards the channels of reception of the bacillus, it appears probable that the bacillus may enter the body through a lesion of the skin; such a mode of entrance would account for the bubonic and septicæmic cases. In plague pneumonia the infection takes place through the respiratory tract, though there is no direct proof of this. No evidence has been obtained that the bacillus has entered through the stomach or intestines by infected food, though rats fed on infected material contract the disease.

The writer has noticed the following points:—

1. Plague spreads like a wild-fire throughout the length and breadth of India during spring and early summer—the so-called Plague Season—and makes a havoc especially in crowded cities.
2. The disease is aggravated by over-population with consequent insanitary surroundings.
3. During the epidemic the rats begin to die with signs and symptoms of asphyxial death.
4. The virulence of the disease is checked after good showers of rain.
5. Dusting lime freely on the soil has proved to be beneficial.
6. The disease is very rare, except imported cases, in undisturbed soils with plenty of trees and vegetations.
7. Statistics show that people occupying the unpaved first floor are more prone to the disease than people of the second or third floor.

From the above facts the writer concludes that plague, in spite of the time-honoured bacillary theory, seems to have some relation with slow form of carbon-di-oxide gas poisoning.

Students of geology know it well that earth radiates more heat with the evolution of carbon-di-oxide gas after winter season; that rats living close to the earth begin to suffer first, that rain water dissolves carbon-di-oxide gas as it percolates through the soil, that lime coming in contact with CO_2 form insoluble calcium carbonate, that vegetations take carbon out of the soil and fix them to form a part and parcel of their own bodies, and that an unpaved first floor room is subject to be infected by the gas generated from the bowels of earth.

The writer now proceeds to narrate briefly the mode by which the disease spreads:—

1. By the agency of man, *i.e.*, an infected individual arrived in a village and a week or ten days later dead rats are found in the house. The area in which dead rats are found now increases and soon a plague case appears in the vicinity.

2. By infected clothings, &c., conveyed from an infected place to a healthy individual.

3. By migration of rats, flies fed on infected rats.

Hence the preventive treatment involves—

(i) Control and supervision of individuals coming from infected area.

(ii) Burning of clothes.

(iii) Destruction of rats in the area to be protected.

The treatment of plague may be considered from prophylactic, therapeutic and hygienic points of view.

I. Prophylaxis:—

1. Personal and domestic cleanliness are of the first importance.

2. Vermin and insects which infest the house are capable of harbouring the plague bacillus, and of conveying it to human beings; hence try to dispel them by the fumes of sulphur, resin, &c.

3. Remove dust, dirt and all uncleanness.

4. Rooms should be well ventilated.

5. Remove food from the room of the sick.

6. Out-door exercise is good.

7. Disinfectants must be freely and frequently used for the hands and sprinkled about the floor.

8. MANSON recommends the destruction of rats as a preventive measure. He tersely puts it: "To prevent cholera the tea-kettle, malaria the mosquito-net, and plague the rat-trap. (*B.M.J.* ii 1899, p. 922).

A. BUCHANAN in *B.M.J.* May 30, 1908, remarks that the presence of cats in villages is a great protection against plague, and concludes that when the number is sufficient all risk of plague is abolished.

9. HAFKINE'S fluid for inoculation:—

The Indian Plague Commission has reported in favour of preventive inoculation (vide *The Practitioner*: April 1900, p. 458).

CONDON in "The Bombay Plague" concludes:—

(a) that inoculation is harmless;

(b) that when given in the incubation stage, it has in many cases the power of aborting the disease;

(c) that inoculation affords to all those inoculated a strong protection against attack of plague;

(d) that in the few cases where inoculated people are attacked, a very large proportion recover.

II. Therapeutic:—

The writer supports the statement of JAMES CANTLIE: "No specific cure for plague by Medicine is known."—*Practitioner*, Special Plague Number, Oct. 1900, p. 387.

Promptly treat symptoms as they arise.

Internally:—

Open bowels by calomel followed by a saline aperient in the morning.

Prescribe any of the following:—

i. R—Acid Carbolic m. ii.
Tinc: Auranti 3 i.
Aq. Chloroform ad. ʒi.

Mft. for a dose. Sig. One E. 4 h.

ii. R—Cyllin, ʒij.
Syr. Auranti ʒ iii.
Aq. Anethi ad. ʒvi.

Mft. Put 6 marks. Sig. one E. 3 h.

iii. R—Liq. Iodine Trichloride, m. iii.
Glycerine. m. xx.
Aq. Rosæ, ʒiv.

Mft. for a dose: Sig. one E. 3 h.

N. B.—Put into a bottle Pot. Iodide 180 grs. and Pot Chloras. 180 grs.; shake them well for 5 minutes, then add 3 ozs. of pure hydrochloric acid, and keep the whole mixture in a cold place for 10 days; after 10 days throw out the mother-liquor and take the crystals only. Weigh them and add water 20 times to the weight of crystals.

Dose 15-40 m: 4 to 6 times a day.

As a preventive 5 m. for a dose once a day.

After 4 to 8 doses temperature falls down, when prescribe:—

R—Caffein Citras gr. ii.
Quinine Sulph gr. ii.
Acid Carbolic gr. i.

Mft: for a pulv: Sig one E. 3 h.; in addition to the above medicine 3 or 4 times a day.

Locally —

1. Antiphlogistine over buboes.

2. Half a dozen leeches over buboes.
3. An ointment of finely powdered 'Gila' with honey: apply it over buboe E. 2 or 3 h. till it subsides.
4. Hot compress of hydrarg. perchloride gauze to enhance suppuration, when open it.
5. "Chitrak" paste; Rub root of 'chitrak' with cold water against a stone: apply it as thick paste over buboes every quarter hour till it has been applied three or four times. By this time a decided inflammation ensues; apply hot poultices to hasten the process, when operate.

Treatment by Antiseptic Serum:—

The first injection should be 100 c.c., it should be followed up within 6 to 8 hours by another, and then if necessary by a third. Thereafter on the abatement of fever and general and local improvement, one or two small injections of from 20-50 c.c. should be given at intervals of 24 hours.

Treatment by injections:—

(1) Formaldehyde or formalin. DR. BARROW of New York recommends 500 c.c. of formalin (40% of formaldehyde) strength 1 in 5000, to be injected subcutaneously; the effect is magical with a fall in temperature. Blood is found to be loaded with streptococci.

The writer recommends 20 drops of 1 per cent Sol: of Formalin in Saline Sol. to be injected in the vicinity of the buboes, every 6 hours till the temperature falls down to normal.

Paint locally over the bubo the following:—

R—Formalin m.v.
Glycerine ℥i.

(II.). Sodium Cinnamate.

20 drops of half per cent. Sol. of Sodium Cinnamate have been injected in the neighbourhood of the bubo every 6 hours by the writer with some success; 2 or 3 injections are required; the object being to increase leucocytosis.

Treat the patient symptomatically:—

1. Cardiac Debility:

(a) Hypodermically:—Tabloid of Digitalin et Strychnin gr. 1/100 each.

(b) Internally:—

i. Liq. Adrenalin (1 in 1000).

Dose:—5 to 10 drops with saline solution ev. 4 h.

ii. Ext: Renaglandin (Oppenheimer & Sons).

Dose: 5 to 20 m. per mouth or subcutaneously.

iii. R—Musk gr. ii.
Caffein Citras gr ii.
"Makaradhai" gr. ii.
Ext: Strophanthus gr. 1/2.
Honey qs.

Mft: for a dose. Sig. one every 6 h.

iv. R—Liq: Strychnine Hydroch. m. iii.
Vin: Gallac ℥i.
Tinc Cardamom Co. m. xv.
Aq. Chlorof. ad ℥iv.

Mft: for a dose. Sig. one every 4 hours.

2. Pneumonic Plague.

R—Ammon Chloride gr. vii.
" Carb. gr. iv.
Acid carbolie m. i.
Spt. Etheris Nitros. m. xx.
Aq. Chloroform ad ℥i.

Mft: for a dose: Sig. one ev. 3 hours.

3. Sleeplessness:—

- (a) Chloral amide gr. 10 to 15 at bed-time.
- (b) Bromural gr. 5 to 10 before going to bed.
- (c) Sulphonal and Trional of each ten grains, in hot soup.

4. Delirium:—

Cold to the head; sponge body with warm water and a tabloid of hyoscine hydrobromate gr. 1/100 each.

5. Diarrhoea:—

It seldom requires treatment; if severe, the writer recommends the following:—

R—Salol gr. ii.
Dover's powder gr. ii.
Bismuth Subgallate gr. x.
Pulv: cretæ aromatic gr. x.

Mft: for a Pulv: Sig. one ev. 4 h.

6. Hyperpyrexia:—

Sponge the body. Ice over head and spine, hot drinks, brandy internally.

N.B.—Antipyretics, e.g., Antipyrin, Phenacetin, &c., are forbidden.

7. Vomiting:—

Ice to suck, mustard plaster over epigastrium and half a teaspoonful of each of the following:—

Caffein Citras Effervescence, and Cærium Oxalus Effervescence (Bishop's) every 3 hours.

III. *Hygienic Treatment*:—

1. Excreta and sewage must be disinfected before disposal.
2. Rats must be caught, not fumigated out of their runs.

Dead rats should on no account be handled; pour plenty of kerosine over them before removal.

3. Burn all clothings, beds, &c.
4. Conveyance should be made by ambulance waggons.
5. Disinfection of houses, rooms, must be done thoroughly.

Dietetic Treatment:—

Milk is not well tolerated by the patient:—

Plasmon, Sanatogen, Allenbury's diet, are good.

Jug soup, chicken broth, beef tea are well borne.

The nurse must be told of the danger of sudden death from allowing the patient to get out of bed or even to sit up in bed; hence the necessity of feeding the patient with a feeding cup. Palatable peptone, panapeptone and peptone wine, are excellent diets.

CANCER, OR CARCINOMA.*

BY

SURGEON-MAJOR R. E. WRAFTER, B. M. S. (RETD.)

Cancer, in the popular sense of the term, may be defined as a morbid disease consisting of epithelial cells and fibrous tissue, which invariably originates in middle age of adult life, characterised by a tendency to infect the nearest lymphatic glands and neighbouring connective structure with which it lies in contact by means of its spread through the vascular system. The chief varieties are the hard and soft, and these variations depend on the relative amount of stroma and cellular elements which progressively increase with the age of the development. The causes of this malignant disease are most obscure, but it has long been considered a blood malady and believed by some to be local in its origin, which ultimately leads to a vitiated condition of the constitution. It is often looked upon as hereditary in families. Cancer may occur in any part of the body, but is more common in the mammae of women, the married more frequently than the unmarried, the lips, the skin, the stomach, the testis, the tongue, and the uterus, etc.

Cancer of the Mamma.—Cancer of the breast mostly occurs to females past middle age. The more usual form of the disease commences as a small hard swelling under the skin, at first painless, but in which attacks of acute lancinating pain are eventually experienced. It gradually spreads, involving the substance of the

* Specially contributed to *The Antiseptic*.

mammary gland and drawing down the skin of the nipple. So long as the mass can be moved and the glands in the armpit are not enlarged, there is hope of cure by excision with the knife. When it becomes an open ulcer the chances are less favourable. Women often imagine they have cancer in the mammae, when the malady is not anything of the kind. Until middle age it is rather rare, and even then it does not appear so often as is popularly supposed.

Cancer of the Lip or Epithelioma—commences as a slight ulcer or fissure which will not heal, more often seen in men than in women. But the disease may also be syphilitic, and the diagnosis requires skilful medical advice to distinguish it.

Cancer of the Skin.—Usually commences as a small, hard and nearly insensible swelling. It may remain in this state for weeks or months, or even longer, but at length it passes into a more active condition. It is then distinguished by shooting or lancinating pains, at first only felt at intervals; by discoloration of the skin, which presents to the touch a knotty uneven surface; by its persistent growth, which cannot be restrained; by its spreading to neighbouring parts; by the adjacent lymphatic glands becoming swollen, tender and painful; and by the tendency to form an open and increasing ulcer, from which there escapes an offensive discharge.

Cancer of the Stomach or Gastric Cancer.—When cancer affects the stomach it causes great pain, vomiting of bloody mucus, usually after food, loss of appetite, constipation, the walls of the abdomen are retracted, and a firm, hard tumour may be usually felt on examination towards the left side below the margin of the ribs. Along with these symptoms there is great emaciation.

Cancer of the Testis.—Commences as a hard swelling with a sense of weight and dragging, and eventually acute lancinating pain, and enlargement of the glands of the groin. The testis is also subject to a soft variety of sarcoma.

Cancer of the Tongue.—Commences as a small sore or ulcer, generally near the side and behind the middle of the tongue, which will not heal, eventually becoming the seat of lancinating pain. But an obstinate ulcer on the tongue may be of a syphilitic nature. When ulcers on the tongue arise without any evident cause, they are usually dyspeptic, and should receive appropriate treatment for such ailment.

Cancer of the Uterus.—Happily a rare but most painful and destructive disease. It generally occurs after middle age, and is accompanied by hæmorrhage and an offensive discharge, with great weakness and

emaciation. Cancer of the uterus usually affects the cervix primarily, rarely the fundus. When limited to the cervix, the uterus being mobile, the vaginal part is commonly removed, but recurrence is almost inevitable. The operation may, however, relieve, and scraping away the cancerous surface freely may check the bleeding.

Treatment.—When the diagnosis of cancer is established there is no apparent cure except removal by the knife, and the best method is, doubtless, that of excision, delay being only justifiable when the general condition of the patient forbids the attempt. The removal of these morbid growths by the knife, or their destruction by the application of caustics before glandular involvement has supervened, may, in many instances, effect a permanent cure. No medicament seems to have any special influence on the disease, though some improvement of the general health may be restored by hygienic means, good nourishing diet, and tonic medicines.

SPASM, OR CRAMP.*

BY

SURGEON-MAJOR R. E. WRAFTER, B. M. S. (RETD.)

Under the term Spasm, SQUIVAGES arranged all involuntary muscular contractions, and divided them into two classes, tonic and clonic. This division is still generally adopted.

Tonic Spasm—called by CULLEN Spastic Rigidity—is characterised by a long continued contraction of the affected muscles, alternating with relaxation, the relaxation taking place slowly and after some time, and being quickly followed again by contraction. A very familiar example of tonic spasm is the common cramp of the leg in elderly people, and which occurs to pregnant females by presence of the gravid uterus. So also it is the principal symptom of Trismus, Tetanus, and Catalepsy. In clonic spasm, the contractions of the affected muscles take place repeatedly, forcibly, and in quick succession; and the relaxation is, of course, as sudden and frequent. Illustrations of clonic spasm are to be found in convulsions, in the rapid convulsive movements of epilepsy, of hysteria, chorea, etc. Occasionally we see the two forms of spasmodic action occurring in the same individual at the same time, some muscles being convulsed or affected with chronic spasms, while others are affected with rigidity or tonic spasm. The exciting causes of spasm are chiefly influences affecting the nervous centres, the mind, the senses, the digestive viscera, and the urinary or sexual organs. The immediate cause was supposed to be irritation of the nerves supplying the affected muscles, either at their origins, or in some part of their course, or at their

* Specially contributed to *The Antiseptic*.

terminations; or else a sympathetic affection of these nerves propagated from distant but related parts. Within the last few years, however, the doctrine of SPRENGEL has been revived, who regarded spasm as the result of an alteration of the polarization of the terminations of the nerves in relation to the muscular fibres.

The treatment of spasms or cramp will probably be found under the different maladies of which they form a part. Locally the best plan is brisk rubbing with some anodyne liniment. But in cases where the cramps depend on pregnancy the friction should be gentle, as the enlarged veins generally also present during gestation might be ruptured by hard rubbing. A bandage or ligature tied rather tightly round the limb above the seat of pain will often relieve cramp, but the bandage should not be permitted to remain on for longer than four or five minutes at a time, and should not be used if there are enlarged or varicose veins.

Our Contemporaries. MEDICINE.

Some Points in the Diagnosis of Disease.

BY

JOHN T. MACLACHLAN, M. D.

Assistant Physician, Glasgow Royal Infirmary.

IN the diagnosis of disease we are saved "not so much by faith as by the want of it." Take nothing for granted is the golden rule. Firstly, the clinical facts must be searched for and gathered together, and compared with the facts of our past experience, on the recorded experiences of others, or both. Men of acute observation see and perceive more than those not so gifted by nature. Secondly, the veracity of the patient, or rather, the accuracy or not with which he interprets his own sensations, must be taken into account, for we may be led astray by a patient of a heated or perfervid imagination, as by one of stolid indifference. It is said that trifles make perfection, and assuredly what seems a trifle often points the way to a correct diagnosis. Thirdly, what is called the constitution of the patient must be taken into consideration. SIR DYCE DUCKWORTH has been preaching the importance of this enquiry with illuminating illustrations for years past. A man's constitution is revealed by his illnesses; so taught LATHAM more than fifty years ago. These, of course, show his disease tendencies, and the way in which he reacts to diseases. Thus, the heart in some, the nervous system in others, may show great perturbation in acute disease. It is notorious how the temperature will fly up in some persons from slight causes. Conversely, in demented patients the temperature is a fallacious guide, and tends to

keep low. Pain also is borne by some patients very badly, and tends to prostrate them and kill them unless relieved. On the other hand, a demented patient may die of peritonitis, and the disease may be overlooked owing to the misleading character of the pain.

Some patients, when they are sick, cause great anxiety from uncontrollable vomiting. They seem as if they would vomit their inside out, until the nervous system is soothed by chloral or other hypnotic and anæsthetic. Various kinds of food and various kinds of drugs pick out the peculiarities of a man's constitution. Thus, a fatty meal may show a "liverish patient," or one whose liver is easily deranged. Opium readily makes such patients sick, and brings on congestion of the liver. It may be noted here, that a large proportion of women are made sick by repeated doses of opium. Men are much more tolerant of this drug. I think also that alcohol causes neuritis more frequently in women than in men. Oatmeal frequently produces acne both in men and women. Much starchy or saccharine food is strongly provocative of stomach complaints and rheumatism. In this connection, malt liquors are notoriously bad. I have noticed that people with sour stomachs often suffer from muscular rheumatism, which may partly explain the benefit they derive from alkaline medicines given after meals. Roughly speaking, we may divide people in this country into two great classes—(1) those with a marked tendency to tubercular disease; (2) those with little tendency.

A considerable section of the community have dilated pupils, and a considerable section of the community have comparatively small pupils. The wide pupil gives a soft expression to the eyes. It seems to me an indication of the tubercular type of constitution, and, apart from tubercular diseases, such persons are also liable to typhoid fever and appendicitis. The lymphoid tissue of the bowel as well as of the tonsils is particularly prone to take on disease in such patients. If malignant disease attacks such patients, sarcoma is the type. BASHFORD'S tables show that sarcoma is fairly prevalent in early life, while carcinoma is more a disease of middle or later life.

Rheumatic fever, not muscular rheumatism, is common among the tubercular stock. The skin of the tubercular type is often soft and smooth, and their flesh soft. Rheumatic tendencies unquestionably run in families. Members of such families are liable to Bright's Disease, arterio-sclerosis, stone in the kidneys, chronic catarrh of nose, and throat and stomach, and early impairment of hearing.

I consider people with what is known as a sluggish liver are liable to carcinoma. If the liver does not manufacture the proper amount of urea per day, the urine becomes scanty. Constipation from deficient

secretion of bile is common in those patients, and anæmia from intestinal poisoning. I can recall a gentleman who was very anæmic for years, with constipated bowels, become quite rosy under a daily dose of Glauber's salts. When the liver is not acting well, the line of expression round the eyes is blurred. Gouty patients show this sagging of the under eyelids very well. This blurred line running outwards from the inner canthus of the eye is a very significant sign. It may indicate cardiac, renal, or hepatic disease, and calls for very careful scrutiny of these organs.

The urea output may fall from failure of its excretion on the part of the kidneys, as in Bright's Disease, or fall owing to deficient manufacture on the part of the liver. In this way, cirrhosis of the liver may be suspected in difficult cases, and the diagnosis cleared up. The amount of urea passed per day should be calculated. If the kidneys be normal, and if the urea output be reduced a half, that will indicate the liver is markedly diseased, either from cirrhosis or other disease. When the pupils of the eyes are small and do not react to light, the expression is wooden. This stolid, wooden look of a patient points to one of two diseases—either tabes dorsalis or general paralysis of the insane. The shooting pains round the epigastric region in tabes are apt to be put down to indigestion. Nocturnal restlessness, fixed pupils, increased knee-jerks, are strongly suggestive of general paralysis of the insane. Of the many protean forms that hysteria assumes, lockjaw is one of the strongest. A female patient simulated lockjaw so closely that actually chloroform was administered to check the spasms. A certain twitching of her eyelids led to the correct diagnosis of hysteria, which was justified by her prompt recovery under suggestive treatment.¹ Another young woman feigned apoplexy, but her success was short-lived.

Malignant disease of the liver is expressed on the countenance by a weary, worn look, with a pallid or clay-coloured complexion. There is the apprehensive manner, so common in malignant disease of the body. The patient feels the loss of power and strength before the physician discovers the physical signs. This is very different from the waxy pallor of chlorosis, or the pale and puffy look in Bright's Disease. The flushed cheek, bright eyes, and alert refined features in phthisis pulmonalis are readily appreciated. The beautiful, rosy cheeks, with sausage-shaped fingers, and an unwieldy, shapeless body, in a woman, is almost diagnostic of myxœdema. A turgid, swollen, red, or livid face is strongly suggestive of intra-thoracic growth. A red, congested-looking face, with

1. She was told that a surgeon would apply a red-hot iron to her back at 6 P.M. if she was not better by that time.

puffy eyelids, may point to old-standing emphysema, and the facial expression is evidently the result of the incessant paroxysms of coughing. In the same way, the lower eyelids become markedly puffy in whooping-cough. In scarlet fever and diphtheria the eyelids are usually a little puffy, due, I believe, to the kidney implication, as albumen, in my experience, is always present in small amount in the urine. In measles we have the tumid nose and eyelids, the tangled hair, and drowsy, irritable manner. In enteric fever the expression is wonderfully calm and placid, and not indicative of acute suffering.

No physician will neglect a physical examination of the patient; but he who does not study the expression of disease, as revealed by the form, manner and aspect of the patient, will often be at a loss to know in which direction he may most profitably investigate the seat and nature of the malady.—*The Caledonian Medical Journal*.

Spirit Lotions.

DARIER, in his *Precis de Dermatologie*, gives the formulæ of several of these lotions. They are especially useful in affections of the skin, like seborrhœa and acne, and in the analogous affections of the scalp, pityriasis capitis, and alopecia. If the scalp is very dry, from 1 to 5 per cent. of castor-oil should be added to the lotions.

R	Naphthol	..	..	..	gr. iss.
	Hydrargyri Perchloridi	..	..	..	gr. iij.
	Resorcini				
	Ammonii Chloridi.				
	Chloralis Hydratis	..	..	ana	gr. viij.
	Aquæ Lavandulæ	..	..	..	iv.

Misce. Fiat lotio.

"To be applied at bedtime."

R	Hydrargyri Perchloridi	..	..	..	gr. iss.
	Acidi Salicylici	..	..	..	gr. iij.
	Liquoris Carbonis Detergentis,				
	Spiritus Aetheris Compositi,				
	Spiritus Rosmarini	..	..	ana	ss.
	Spiritus Rectificati	..	..	..	ij.

Misce. Fiat lotio.

R	Olei Betulæ,				
	Olei Cadini	..	..	ana	xxv.
	Tincturæ Quillaiæ	..	..	..	iv.
	Spiritus Rectificati	..	..	ad	ij.

—*The Practitioner*.

Balsams and Ointments in Dermatology.

RENE CHARCELLAY devoted his thesis at Paris to a study of the different balsams and ointments used in dermatology as much from an historical point of view as a clinical. Some of these are quoted in the *Journal de Médecine et de Chirurgie pratiques*.

The first is one of DUPONT'S prescriptions in which guaiacol is combined with aromatic essences. It is particularly useful in the treatment of burns, especially those, deep and serious, which are sometimes caused to engineers and stokers in mail steamers.

R	Essentiæ Origani,				
	Essentiæ Thymi,				
	Essentiæ Verbenæ,				
	Essentiæ Geranii	..	..	ana	ij.
	Guaiacolis Crystallizata	..	..	..	iv.
	Olei Theobromatis,				
	Ceræ Flavæ	..	..	ana	xxv.

The parasitidal action of balsams and ointments is well known. They have the happiest results in the treatment of affections caused by animal parasites. BESNIER prescribes the following for inguinal phthiriasis, as being less irritating than and quite as effective as mercurial ointment.

Petrol,					
Balsam of Peru,				of each	ss.
Oil of Bays	..	..	..		

BROCQ and JACQUET give a preparation of the same kind for head-lice.

Petrol	..	..	..	..	iv.
Olive Oil	..	..	..	..	ij.
Balsam of Peru	..	..	..	..	v.

For the itch, HALLOPEAU and LEREDDE advise Balsam of Peru, pure, mixed with oil, or in an ointment.

R	Resorcini	..	..	..	ij.
	Spiritus Rectificati	..	..	..	i.
	Balsami Peruviani	..	..	..	ss.
	Acidi Benzoici	..	..	..	gr. iv.
	Olei Caryophilli	..	..	..	m. ii.

Misce. Fiat. unguentum.

The following is known at the St. Louis as "Gaucher's Eczema Ointment" :—

R	Sulphuris Præcipitati.				
	Acidi Salicylici,				
	Camphoræ	..	..	ana	gr. xv.
	Olei Cadini	..	..	..	ʒiiss.
	Zinci Oxidi	..	..	..	ʒij.
	Paraffini Mollis	..	..	..	ʒj.

Misce. Fiat unguentum.

CHARCELLAY also gives the prescription of GASTON and GUILLET for the treatment of burns. In a serious case the liniment is applied on wool.

R	Linimenti Calcis	..	..	..	ʒiiss.
	Adipis Lanæ	..	..	..	ʒvj.
	Paraffini Mollis	..	..	..	ʒiiss.
	Olei "Gomenol"	..	..	..	ʒiiss.
	Ichthyolis	..	..	..	ʒiiss.
	Orthoformi	..	..	..	gr. xxx.
	Essentiæ Verbenæ,				
	Essentiæ Lavendulæ	..	..	ana	ʒij.
	Magnesiæ Carbonatis,				
	Pulveris Talci	..	..	ana	q.s.

Misce. Fiat linimentum.

The dressing with this is done at first every day. The burns clean up quickly, and the swollen tissues around become smaller. Application causes no pain, and there is very little discharge of pus. From the fifteenth to the twentieth day the wound is sprayed with solutions of resorcin (1 in 500). The liniment is at the same time replaced by the following ointment :—

R	Balsami Peruviani	..	..	..	mxxx.
	Unguenti Styracis	..	..	..	gr. xv.
	Essentiæ Eucalypti	..	..	..	mxx.
	Essentiæ Cannellæ	..	..	..	mvj.
	Paraffini Liquid	..	..	..	ʒvj.
	Cretæ Præcipitatae	..	..	..	ʒiij.

Misce. Fiat unguentum.

—*The Practitioner.*

Ethyl Chlorid as a General Anaesthetic.

Ethyl chlorid is regarded by the writer as a comparatively safe and reliable general anaesthetic, which is most suited for operations for removal of adenoids and tonsils in children. It is simple of administration, and does not require an expert, or one of large experience, to give

it. The patient is under the influence quickly, is out almost immediately on completion of the operation; there are no unpleasant or dangerous effects from its use, either during or after the operation. This anaesthetic is not only especially applicable in operations in the throat, but should be used in most other operations performed on children. When the inhaler is kept over the patient's nose and mouth, he can be kept under the anaesthetic as long as desired. It is only when that is removed that the patient regains consciousness more quickly than with other anaesthetics. When long operations are necessary on the nose or throat, the writer advised first putting the patient under ethyl chlorid, and then continuing deep anaesthesia with ether using the drop method. —*Monthly Cyclopaedia and Medical Bulletin.*

Hypnotism and Death.

THERE recently occurred, under circumstances peculiarly disconcerting to normal sensibilities, a death under hypnotism. A travelling "professor of hypnotism"—who when not thus occupied was a piano salesman—was filling an engagement in an "opera house," entrance to which was secured by the exhibition of a dime by the affluent and a nickle by others. The "professor" had brought with him two "horses" or "leaders," men who travel with the hypnotist and for a small salary permit him to "do stunts" with them. After the good old-fashion, when the "professor" calls on the audience for volunteers, these "horses" go up first, and by their example encourage the unsophisticated to follow them.

On the melancholy occasion here noted the better of these "horses" was put into the cataleptic state, although the "professor" had been warned not to use this man, who was dissipated and a continuous drinker. Nevertheless he was made rigid; his head was then put upon one chair, his feet on another, the remainder of his body thus being unsupported. The "professor" stepped from a table upon the abdomen of this unfortunate and thence down to the floor. Having done this two attendants, under his orders, lifted the "horse" to a standing position, when the "professor," clapping his hands, cried out, "relax." The relaxation was so sudden that the body slipped from the hands of the attendants to the floor, the head striking upon a chair in its descent.

The "horse" was then carried behind the scenes, but the "professor" could not awaken him. Physicians were then called for from the audience, and there were three present, for the manager of that theatre had invited all the doctors of that town to come. There was at first no response, for it seemed to the physicians that their being called upon was

but a part of the advertising game, into which they were not desirous of being drawn. Finally, however, they did go, but all their efforts at resuscitation availed nothing. Then appeared, from a similar theatre up the street, a rival hypnotist, armed with a diploma from some school of hypnotism, and a photograph of himself, in case it should be needed; this unassuming man volunteered, if "the control" were transferred to himself, to bring the victim back to life; passes, "suggestioning heart action to the subject," all the tricks of the trade were gone through, but the subject's ear was deaf to them—and for the all-sufficient reason that he was dead.

Autopsy revealed a ruptured aortic aneurism three-quarters of an inch in length. Who dare question that this rapture was the result of such a procedure as stepping with all one's weight upon the rigid body of a man supported only by the head and feet. And yet the "professor" had the hardihood to claim that he had no knowledge of any organic weakness on the part of his "horse"; how could he have dared such procedures without some examination of the cardium and other organs!

Hypnotism has long been recognized by those knowing most about it to be a dreadfully dangerous procedure—dangerous physically, psychically and morally, even in the hands of the most conscientious and able experimenters. It is now very rarely resorted to as a remedial measure; suggestion, persuasion and re-education having almost entirely taken its place in legitimate psycho therapeutics. "Hypnotism is a dangerous measure, and only of occasional service" (CHURCH). Its display in public is peculiarly pernicious; its effect upon the morbidly-minded is to accentuate abnormality.

Since, therefore, responsible practitioners have almost completely abjured it, how reprehensible become public exhibitions of it, in which the subjects hypnotized are made to do things ignoble, contemptible and subversive of human dignity, for the edification and amusement of nickle and dime audiences. We have recently seen a subject exposed in broad daylight, in a public show window, in a cataleptic state, with placard pinned to his clothing notifying that at the evening's performance in the adjacent theatre the world-renowned hypnotist so-and-so would awaken him. The rival hypnotist we have mentioned as so modestly coming forward with his photo and his diploma, is now advertised to appear in a metropolitan theatre, with the announcement that had he been called upon in time that unfortunate tragedy would, through his incantations, have been avoided; all would have been well had he come betimes upon the scene.

Now that a death has occurred in consequence of these detestable practices, should not a law be framed (such as now exists in France) adequately operative to prevent such exhibitions, so abhorrent as they are to all sense of decency, so baneful in their effect upon the public morals, so subversive of right feeling and normal instincts!—*The Dietetic and Hygienic Gazette*.

Acute Iodo-Thyroid Toxæmia.

BY

F. S. STANNARD, M.D. TROY N.Y.

MISS N.D., age 26, had an interstitial thyroid or bronchocele, first noticed at the age of sixteen which gradually grew to a large size, causing a decided disfigurement. One sister, older than she, also had an enlarged thyroid, the family history is otherwise negative as regards her case.

About eleven months upon the advice of friends and against the advice of her physician, she decided to have this gland treated by injections to cure it. The procedure, as near as I can make out, was to inject one and sometimes two hypodermic syringes full of an emulsion of equal parts of ether iodoform and olive oil, at other times the gland was aspirated and a reddish brown fluid withdrawn and then washed out with a solution of Seiler's tablets in water. Under this treatment the gland decreased markedly in size, but she, also, began to lose weight and twice after these treatments she said her mouth became sore and her teeth felt on springs. She, also, frequently after being treated was sick at her stomach and vomited for twenty-four hours following a treatment.

At about the end of ten months treatment, going twice or three times a week (and I wish to say that during the last two or three treatments no iodoform was used) the following train of symptoms occurred: She said that the aspiration of the gland at this treatment caused her intense pain and that what appeared to her to be a large quantity of dark blood was withdrawn and after the gland had been washed out she had a succession of chills. Proceeding to a car she was seized with nausea and vomiting, she was helped to her home, when remembering her former experiences she did not call a physician but waited with the hope of growing better. The next evening I was called in and found her without elevation of temperature, pulse 90, countenance anxious and pale, diarrhoea, stool containing a considerable blood and vomiting of reddish brown mucous with great pain and tenderness over intestines. The tongue and mucous membranes of mouth were completely covered

little vesicles. There was a constant desire to move the bowels and urinate in small quantities. The thyroid was very hard, hot and red especially at seat of injection. She developed severe attacks of dyspnoea. The next day the dyspnoea and strangury increased and she began to menstruate profusely and spasmodically and had attacks of hiccoughs lasting for several hours at a time. Her breath was fetid and apparently every bit of the mucous membrane of her body were the seat of small ulcerations, from the tip of her tongue through the gastro-intestinal tract out on to the anus, the later becoming quite large and causing intense suffering.

After three days of intermittent hiccoughing, her symptoms grew a little milder, the bloody diarrhoea, vomiting and strangury still keeping up, but I now found a systolic endocardial murmur plainest over the aortic orifice and reflected to back. The body, arms and face began to swell; but did not pit on pressure, nor was there any ascites, but the urine became very scanty and was passed only during attacks of strangury and so mixed with blood and faecal matter I could not examine it. The pulse still never went over 96 and the temperature was only $\frac{1}{2}$ degree above normal in the afternoon, and that for the first seven or eight days only. During this time she was mildly delirious, very anxious and depressed and suffered intense pain and tenderness over stomach and intestines and præcordium.

Upon the tenth day an erythema appeared over the thyroid gland rapidly extending over face, body, arms and legs, dark red and at first becoming white upon pressure and not raised. It soon became coalescent and extended into the deeper layers of the derma, not paling on pressure and beginning in seven or eight days to desquamate. This desquamation keeping up constantly for the next four weeks, every particle of skin on the whole body coming off repeatedly in some places in sheets three or four inches square, in others like bran. The parts in contact with the bed becoming very sore and painful. About this time the ulcerations of mucous membrane of mouth began to heal and hæmorrhagic exudations from the mucous membranes which were entirely denuded of epithelium occurred, the cardiac disturbance began to be marked, the pulse ranging from 110 to 140 and at times 180. The temperature ranging from 97.5 to 98.5. Urinary analysis on the eleventh day was as follows:

Specific gravity, 10.10; dark amber and slightly cloudy; slightly acid; no albumen; no sugar, no casts; some pus and blood cells.

On the fifteenth day the specific gravity was 10.15, on the twenty-fourth day the same but lighter color, on the twenty-seventh day: specific

gravity, 10.05; acid and light straw color: trace albumen; pus cells; granular casts; quantity 20 ounces.

I was unable to find a practical test to detect iodine in urine as the starch test was not sufficiently delicate. On the thirty-third day urine was normal, albumen and casts absent, quantity four pints. Blood count on seventeenth day showed white 141,000, red 3,141,000, hæmoglobin 90 diminished coagulability. Differential count polynuclear, 78 per cent.; lymphocytes, 14 per cent.; large mononuclear, 6 per cent.; eosinophile, 2 per cent.; transitional cells, 2; one hundred and two cells counted. Between the thirtieth and fortieth days she had attacks of a fine trembling lasting from one-half hour to twenty-four hours in duration, occurring when asleep as well as when awake, and sufficient to shake the whole bed. About the thirty-fifth day the passages became normal and diarrhoea stopped, but if she did not have at least one vomiting spell in twenty-four hours she would develop toxic attacks in which it was feared she would die, her pulse becoming small and so fast as to be uncountable. The ulcers on anus were relieved decidedly by a mixture of orthoform and bismuth dusted on. The conjunctival mucous membranes were affected with the rest, ulcerating, desquamating and exuding blood and pus from the denuded epithelial surface. The swelling of face, arms and trunk also disappeared and convalescence became established. An examination on the fiftieth day showed pulse 100 and endocardial murmur gone. Two weeks later her pulse dropped to 90. A cystic degeneration of the middle lobe has since taken place causing an abscess which opened in the median line and at the most dependent portion of the gland. The gland has become quite small and her health fairly good except for a stiffness of the knees and back which makes it very difficult to walk or get up after sitting. This has since disappeared.

In conclusion it seems to me that this condition resulted from a traumatism allowing an abnormal quantity of thyroid secretion to escape into the vascular system from what is normally a ductless gland and at a time when the system was at the extreme point of toleration from long continual use of iodides, and the interesting features are the marked trophic disturbances of the mucous membranes and skin, absence of disturbances to nervous system and temperature—in fact, all symptoms being apparently due to the trophic and toxic disturbances.—*New York State Journal of Medicine.*

PUBLIC HEALTH AND FORENSIC MEDICINE.

The Effect of Blue Colour Upon Flies.

MARRE and FE.—The authors observed that cow stables, the walls of which had been painted blue, were evidently avoided by the common

house fly. It is therefore recommended, in order to keep the flies away from the stables, to paint the walls once or twice yearly with chlorinated lime solution to which some ultramarine blue has been added—10 pounds of slaked lime and 500 grs. ultramarine blue in 100 liters of water. The most favorable time is in June and in August as the times when the flies begin to multiply and when they are especially numerous. —F. R.—*Medical Review of Reviews.*

SURGERY.

The Early Recognition of Cancer of The Breast.

BY

T. CRISP ENGLISH, F.R.C.S.

Senior Assistant Surgeon to St. George's Hospital.

THE increasing success which follows the surgical treatment of cancer is due to two factors—earlier operations and more thorough operations. The earlier recognition of cancer is a subject in which there is still room for considerable progress, for, although it is universally agreed that early diagnosis is essential, there is still a tendency to neglect the actual teaching and the study of the very first signs of the disease.

The student, from the beginning of his surgical career, is apt to get a wrong impression of the clinical features of cancer of the breast; too much prominence is given to the signs of the fully established disease, to the so-called "classical signs," and the illustrations in the text-books mainly concern large tumours, fungating growths, and widely spread disease of the thoracic wall. These, of course, give an excellent idea of the advanced disease, but they overshadow the early stage in which recognition is all-important. "Classical signs" represent fully established disease; the outlook for patients who present these signs is bad, and operative results in these cases can only be fair. Every description of cancer of the breast should contain a special paragraph devoted to the early signs.

There is no doubt that cases now come to the surgeon at a much earlier date than formerly, but there will always, of course, be cases which are not discovered until the disease is advanced, cases in which the disease is concealed by the patient, cases in which it is watched. Concealment is largely due to a fear of operation, and to a belief that operation will be ineffectual. It is, therefore, of the highest importance that the public should know of the successes which follow early operations. It has been suggested that they should be taught the early signs of cancer,

so that they may consult a medical man at the earliest moment; but the literal application of this suggestion would undoubtedly lead to a large number of people spending their days in fear and trembling; it would lead to introspection and to the imagination of all kinds of evil symptoms. Our obvious duty is to teach the public the importance of at once consulting a medical man even for ailments which appear trivial, and to impress upon them the success which follows early treatment.

In this lecture I shall consider the symptoms and signs which are presented in the early stages of mammary cancer. Two subjective points are noticeable; one is the absence of pain and the other the presence of a tumour.

EARLY SIGNS AND SYMPTOMS.

Absence of pain is a striking feature in the great majority of cases; pain cannot be regarded as an early symptom, and so in most cases the tumour is discovered quite accidentally. This absence of pain is responsible for the overlooking of many growths in their early stages. In the few cases in which pain is complained of, it is probably due to an associated mastitis, and is then of a stabbing neuralgic character, radiating from the breast to the inner side of the arm and to the scapular region. Patients who consult us on account of pain in the breast are most often not the subjects of cancer.

The presence of a tumour, as I have said, usually first calls the patient's attention to the existence of the disease; patients often say that they discovered the tumour when dressing or bathing. In those who are thin the tumour is usually detected early; but in stout subjects with voluminous breasts, the tumour may reach a large size before it is noticed. Superficial tumours are soon felt; those placed deeply in the breast may not be palpable by the patient even when large, and then puckering of the skin, retraction of the nipple, or pain may be the first sign to lead the patient to seek advice.

The following are the physical signs which we should look for in cases in which we suspect early carcinoma. Impaired mobility of the skin is placed first, as the clinical diagnosis depends most often upon this sign; the results of palpation are of far less value, and so are referred to later.

Impaired mobility of the skin overlying the tumour is by far the most important of all the physical signs in early cancer. If looked for carefully, it is found very early in cancer of the breast; it is very constant, and is of the greatest diagnostic value. The breast as a whole should be

made to move over as wide an area of the chest wall as possible, and the effect should be compared with that of a similar movement on the opposite side; the slightest pulling on the skin points almost certainly to malignant disease. This pull will obviously be very slight when the growth is still small, and practice is essential for its ready detection. HALSTED refers to the delicacy of the test in descriptive language: "Sometimes only the almost imperceptible suggestion of a pull, which when the very faintest possible is elicited by dislocation in one direction only; this sign, however slight, is all that is needed for diagnosis." He adds that comparison with the other side is essential, for any breast, if displaced far enough, will tug, in a way, upon the skin. This impaired mobility of the skin is due to the early involvement of the fibrous bands, the suspensory ligaments described by SIR ASTLEY COOPER, connecting the breast to the skin. Carcinoma very early fixes one or more of these bands, and so causes that slight pulling upon the skin when the breast is moved.

Impaired mobility of the nipple is demonstrable in the early stage, unless the tumour is near the periphery of the breast, and corresponds to the retracted nipple of the later stages. This impairment is due to fixation of the ducts by the growth, causing an anchoring of the nipple. The sign will be detected by a careful examination of the relation of the nipple to the tumour, and by the manipulations employed to detect impaired mobility of the skin.

Flattening of part or the whole of a normal curve of the breast is a sign recently emphasised by Mr. G. LENTHAL CHEATLE, who points out that the flattening is best seen by viewing the curve from a position on a level with it, the surgeon lowering his eyes to the level of the breast.

Alteration of the level of the nipple may be an early sign, especially when the growth is situated at the highest or lowest part of the gland; but too much reliance must not be placed upon this sign, for one nipple may be at a different level to the other as a congenital difference, or as the result of old inflammatory trouble. The usual effect of carcinoma upon the nipple level is to raise it, and this sign, in conjunction with those already mentioned, may be of great assistance.

Palpation, of course, forms an important part of the examination, but palpation can seldom give certain information in early cases unless the signs already mentioned are looked for at the same time. Careful palpation with the flat of the hand will almost invariably distinguish between chronic mastitis and a tumour; but a small cyst surrounded by mastitis

may feel exactly like a carcinoma. Multiple tumours, especially if occurring in both breasts, are most probably innocent, but even then one of these tumours may be an early growth.

Breast tissue should never be picked up with the fingers, for this proceeding is misleading to the surgeon and unpleasant for the patient; normal breast tissue, if picked up, will usually give the impression of a tumour. It is also of great importance that a doubtful tumour should not be manipulated too vigorously, for much harm may be done if the tumour is cancerous. Malignant tumours, and especially early ones, are often ill-defined, and palpation may even leave one in doubt as to whether there is any tumour at all. This in itself is suggestive of carcinoma, for cysts and simple tumours are easily defined. A carcinoma deeply placed behind the nipple is especially difficult to feel: in this case the signs mentioned are far more helpful than the results of palpation.

Retraction of the nipple and puckering of the skin correspond to the impaired mobility of the nipple and skin seen in the early stage; the suspensory ligaments and the ducts which were first fixed by the growth later become shortened. These signs, therefore, usually represent a comparatively advanced stage of the disease. Retraction of the nipple is a sign which has received an exaggerated importance; the time at which this sign appears depends upon the position and the nature of the growth. When the growth is situated in the central part of the breast, retraction may appear early; but when the growth is not near the nipple, retraction may be quite late.

Enlargement of the axillary glands is a late sign, and points to considerable advance of the disease, and makes the prognosis serious. I have in a previous lecture referred to HALSTED's statement, based on his unique experience of large numbers of radical operations, that when no involvement of axillary glands is evident, two out of three patients are cured by operation, but when the glands are obviously diseased, three out of four die. There could be no stronger argument than this in favour of operation at the earliest possible moment.

It is obvious that in many cases of early disease the surgeon will be in doubt even after a most careful examination. In these cases the doubt must be cleared up at once by operative examination of the swelling. There can be no possible justification for delay or for trying the effect of local applications and drugs; those who adopt this course are undertaking a grave responsibility, for which there is no excuse. Doubtful tumours usually turn out to be malignant, and therefore must be investigated at once. It is very easy to wait and watch, and patients who

know not the facts of the case are usually in agreement with such a course. On the other hand, when matters are carefully and gently explained to them, patients with mammary swellings are particularly amenable to reason. Tell them plainly that they have a swelling in the breast about the nature of which it is impossible to be certain, and that it is wisest to clear the matter up at once, whilst the trouble is early, and not run the risk of allowing a serious trouble to become more advanced. There is no need to use the word "cancer" when speaking to them, for there is no more cruel word in the medical vocabulary than this.

There are several procedures recommended in the operative diagnosis of mammary tumours. These are: (1) incision on to or into the tumour; (2) excision of the tumour and macroscopical examination of the cut surface; (3) excision of the tumour and an immediate microscopical examination "whilst the surgeon waits;" (4) excision of part or whole of the tumour, and microscopical examination of hardened sections; (5) removal of a portion of the tumour for microscopical examination under local anæsthesia a few days before the proposed operation.

In practice one finds that the choice of method must depend upon the circumstances of the case. Personally I place great reliance in the older method of a limited incision into the tumour, as being less likely to cause dissemination of cancer cells than more extensive proceedings. In 90 per cent. of the cases a positive diagnosis may be made by examination of the cut surface, and in many cases it is quite sufficient to carry the incision only as far as the edge of the tumour, and not through it. In the 10 per cent. of cases where doubt still exists, the diseased area should be excised for microscopical examination. I am not in favour of an immediate microscopical report, for in difficult cases there cannot be that certainty which is the one thing desired; experienced pathologists tell one that it is often impossible to decide between chronic mastitis and early carcinoma by examination of fresh sections only; in fact, the pathologists with whom I usually work are reluctant to make these immediate examinations. Circumstances, however, may make the use of this method advisable; for instance, cases in which patients would not consent to a second operation.

In conclusion one must point out that practice and time are essential for the early detection of mammary carcinoma. Every opportunity should be taken of carefully examining tumours of the breast, and it is especially important that time should be devoted to each examination, for hurried examinations lead to little knowledge and uncertain diagnosis.—*The Hospital.*

Some Personal Experience with Diseases of the Breast.*

BY

J. W. EDDY, M.D., OSWEGO, N. Y.

I was taught in college, when a woman presented herself with a tumor of the breast that I must advise that she should have it removed at once, and it is good teaching, but sometimes the woman will not submit to operative interference, and then if it turns out that it is not malignant, the surgeon is censured by every one that is interested in her and those that take pleasure in injuring a professional reputation.

In the first year of my practice a lady twenty-six years of age, unmarried, came to me with a tumor in her right breast which was nodular. The nipple was retracted and a sticky discharge oozed from it. I at once told her that the growth must be removed, or she would eventually die from cancer. A family consultation was held, and she went to New York and saw the late DR. FRANK HAMILTON, who agreed with me that no time should be lost in its removal, and it must be done at once, as it was a cancer. On going back to her hotel she met a relative who was a friend of DR. GOULEY, so she was taken to DR. GOULEY's office and after several examinations, he said it was cystic disease, and that it was not malignant, and if let alone would not kill her. On her return home she informed me what DR. GOULEY had said. Of course, I disagreed and told her DR. FRANK HAMILTON was right and that DR. GOULEY was only a genito-urinary surgeon, and not a general surgeon, but she decided to let it alone.

After a few years it ruptured, discharged, and healed, and after thirty-four years she has no trouble with her breast and is enjoying perfect health. This breast was coarsely enlarged, indurated, and nodular, and there was a slight discharge from the nipple. On what grounds DR. GOULEY made up his mind that it was cystic disease I do not know, because it certainly had the appearance of carcinoma. Several times during my professional career I have made the same mistake, and it has turned out in about the same way, and I feel that it has not added to my glory.

When a surgeon advises operation, and he does so honestly, and the woman gets obstinate and will not have it done, and it does not turn out malignant, it is anything but pleasant. I will cite just one more case; a patient of mine, forty-four years of age, discovered a lump in the left breast which in four months doubled in size; she also

* Read before the Fifth District Branch of the Medical Society of the State of New York at Watertown, October 14, 1909.

discovered three nodules about the size of hazel nuts, which greatly alarmed her, so that she went to a surgeon in a neighbouring city, and he at once pronounced it malignant and advised immediate operation, which she refused to have done. Then she went to another surgeon who advised her, to allow him to puncture the breast with a trocar; she objected and came to me. I insisted that she allow me to make the puncture which she finally consented. I drew from the breast nine ounces of a dark chocolate colored fluid, and in four months the three nodules disappeared, and she has remained perfectly well ever since, and that was twelve years ago.

These above cases go to show that the physician should be guarded in his prognosis, and at the same time earnestly urge the removal of suspicious growths, but do not be too positive about it being malignant, because even though operations are believed in by the laity now-a-days, and the woman that has not been operated upon may feel that she should be, we do find old fashioned creatures that do not believe in innovations, and when we tell them they will die if they do not submit to operative interference, oftentimes we make a mistake which reflects on our skill.

In closing I will say that cystic disease of the breast may have all the symptoms and outward appearances of malignant disease and a diagnosis cannot be made until it is submitted to the knife and microscope.—*New York State Journal of Medicine.*

A New Operative Treatment for Hypospadias in the Male.

The author's method, successfully applied in two cyses, is as follows: Before the new urethra is built, the shaft of the penis is straightened and lengthened, in those cases in which it is deformed and diminutive, by one of the plastic operations. A section of ureter is obtained from a nephrectomy for hydronephrosis, etc. (in one case the author removed it from a child recently dead because of congenital malformations) and the piece of ureter is washed in a stream of normal salt solution. The loose portions of the adventitia are removed. The shaft of the penis is pierced by a trocar-canula, the point of the instrument making its appearance on the scrotal side of the urethral opening. The trocar is removed and through the canula the section of the ureter, attached to a small probe, is drawn. The canula is removed, the excess of ureter is trimmed off at each end and the ureteral ends are sutured to the skin of the glans and of the inferior aspect of the penis. Only a simple dressing is necessary. After the implanted ureter is fully healed in place, injections of sterile oil are made through its lumen. After four or five weeks,

the mouths of the urethra and of the inferior end of the ureter are freed and are united by a circular suture. Perineal drainage of the bladder is advisable.—*American Journal of Surgery.*

The Treatment of Hydrocephalus by Puncture of the Corpus Callosum.

ANTON of Halle first suggested that if a wide communication be made between the lateral ventricle and the subdural space it would be lasting. Accordingly VON BRAMANN developed the following technic: In children the approach is through the anterior fontanelle; when cranial ossification is complete, a small button of bone is removed just to one side of the median line. After the dura is incised, the cerebral hemisphere is gently retracted from the median line, all retaining vessels being ligated. Avoiding the longitudinal sinus, a canula of 2 mm. bore is passed along the falx cerebri until the corpus callosum is reached. The canula is plunged through the corpus callosum and fluid from the distended fourth ventricle escapes through and beside the canula. The latter is then swept backwards and forwards to make a generous opening and is removed. The dura and scalp are sutured.

This method was practised by VON BRAMANN in 22 cases, eight of which were hydrocephalus. Three of these cases were in hopeless condition, with such complications as infected myelocystocele, infected spina bifida, etc. Two recent cases, of the remaining five, have improved, but are of too recent a date to afford definite statements. A child aged 2½ years, whose cranial circumference measured 59 cm., who spoke a few blurred words, cried constantly and had adductor spasm of the extremities, showed marked improvement 10 weeks after operation—the crying had ceased, the child could stand, could utter sentences, the adductor spasm was gone. The second case was that of a boy, aged seven, who had had a progressive hydrocephalus with ataxia, choked disc, inability to walk, etc. One month after operation, the choked disc, headache, etc., had disappeared. The third case was a bedridden child of five who could speak only primitive words, was profoundly apathetic, etc. One year after operation there is marked psychic improvement and the child can sit and control the movements of his limbs.—*Ibid.*

An improved Method of Removing the Testicle and Spermatic Cord for Malignant Disease.

BLAND-SUTTON makes a strong plea for a radical method of operation for malignant tumors of the testis, comparable to those that are performed for malignant growths in other parts of the body. He says that the

surgeon should not be merely satisfied in remarking the primary growth; such operations are nearly always futile for the reason that the patient ultimately succumbs to an intra-abdominal lymphatic infection. The operation which the author has devised and which he practised upon one patient is as follows: After dissection of the affected testis and spermatic cord up to the internal abdominal ring, an incision is made in the semi-lunar line from the costal arch to the internal ring down to the peritoneum. The peritoneum is pushed aside until the entire lumbar region is exposed; all the enlarged lymphatic glands around the aorta and vena cava are then removed. The spermatic vessels are ligated as high up as possible and the vas deferens is ligated at the pelvic brim; the entire mass is then removed. In the author's case, a gland was found over the vena cava which on section revealed metastatic growth.—*A. J. of Surgery.*

Ureterocele.

The writer has gathered 22 cases of hernia of the ureter and adds two. In brief they are:

An adult male had noticed an inguinal hernia for several months. With the beginning of an application of a truss, urinary symptoms began—pain for as long as one half hour after micturition. No frequency. The hernia was small and was reduced without any gurgle. At operation there was a prehernial lipoma which contained a small portion of adherent bladder. External to it was a cord of uniform character, which descended to the bladder—this was evidently the ureter. There was no hernial sac.

2. This patient had had hematuria from time to time. The operation was performed for bilateral scrotal hernia. Adherent to the anterior aspect of the left sac was a cord as in the first case. It was isolated for over two inches and was traced to the bladder.

In both cases the urinary symptoms cleared up after operation.

CACCHIA classifies the published cases of hernia of the ureter into ureterocele simple or combined with paraperitoneal cystocele and extra-peritoneal cystocele combined with ureterocele. There are certain findings by which the diagnosis of this affection may be made. They are: Incomplete reducibility of a hernia leaving behind a soft uniform cord that does not resemble gut, or sac, or varicose veins. Absence of gurgle on reduction. Urinary symptoms, indicating blocking of the ureter. The presence of hydronephrosis without other known cause. Findings by cystoscopy and ureteral catheterization. In most of the reported cases,

however, the physical examination did not lead to a suspicion of ureterocele.—*A. J. of Surgery.*

A New Method for the Removal of Uterine Cancer.

WERTHEIM shows that he used the method now recommended by ZWEIFEL as early as 1900. The method consists in performing a typical hysterectomy by the abdominal route. After all the vessels are tied and the vaginal tube freed from bladder, rectum and paravaginal tissues, the uterus, ovaries and tubes are pulled downward (by an assistant who drags on the cervix) and the pelvic peritoneum is completely closed over the structure. The abdominal wall is now sutured and the patient placed in the lithotomy position. From below, the vaginal walls are now cut across at a sufficient distance from the cervical growth. This procedure completely liberates the internal genital organs which are removed, and the vaginal edges are secured. By this method soiling of the peritoneal cavity should be completely avoided. WERTHEIM says that he has abandoned this procedure.—*Ibid.*

Internal Treatment of Gonorrhœa.

BY DR. I. STERN (Vienna.)

In the treatment of gonorrhœa, and especially inflammation of the posterior part of the urethra accompanied by severe irritation, we have to rely on internal remedies until the acute stage has passed off, *e.g.*, sodium salicylate, salol and sandalwood oil.

Having found that in a comparatively large number of cases the prolonged use of sodium salicylate gave rise to unpleasant symptoms, giddiness, buzzing in the ears, impaired hearing and loss of appetite, we tried thyresol, which, we had heard, had already been used with success.

Thyresol, a methylether of santalol, is a preparation which gives off santalol only very slowly and gradually in the intestinal tract, and is eliminated in the urine chiefly in the form of glycuronic acid. Thus it differs from other balsams from which the active principle is set free in the shape of acids, which irritate the intestines and kidneys. Thyresol is an almost colourless oily liquid, with a faint aromatic odour, insoluble in water, soluble in alcohol, ether and chloroform.

We gave the preparation in the three forms; (1) as a fluid, given in milk; (2) in the form of capsules (5 minims in each), two being given three times a day; (3) in tablets containing 5 grains of thyresol with magnesium carbonate, two tablets three times a day after food.

The non-poisonous character of the drug had been demonstrated in cats. It remained to be seen whether it diminished the discharge and had the same soothing qualities as sandalwood oil without its unpleasant effects.

We administered the preparation to forty out-patients belonging to the working classes. Five had anterior urethritis, twenty-six acute general urethritis, nine subacute urethritis and acute exacerbations of chronic gonorrhœa.

The results being classified according to the duration and site of the disease, we found:

In the five cases of acute anterior urethritis under thyresol treatment alone, the urine cleared up in two cases. In one case although there was an abatement in the irritation, the first portion of the urine still remained cloudy. Two patients of this group remained away.

Unfortunately the number of cases with anterior urethritis has been too small for us to draw any conclusions as to whether the preparation would prevent a spread of the process to the posterior part of the urethra or not.

In the twenty-six cases of general acute urethritis both portions of the urine cleared up with formation of threads in ten cases; in nine the second portion cleared up, the first remaining slightly cloudy; in five cases there was no improvement—in two of these, however, there was a catarrhal prostatitis. Two patients of this group did not return.

In the nine cases of general subacute urethritis and exacerbations of chronic gonorrhœa, we observed clearing up of both portions of the urine in five; once moderate cloudiness of the first portion. In the three cases which were not influenced by the treatment, the prostate was involved.

It is remarkable that epididymitis did not occur in any of the cases treated with thyresol, although all the patients were engaged upon heavy manual labour.

As a rule we noted an improvement after thirty tablets or capsules, *i.e.*, after five days—the purulent discharge become much less, and so did the pain, frequency and urgency of micturition. After twelve to sixteen days there was a definite improvement in twenty-six cases, in seventeen cases with clearing of both portions of the urine and the formation of threads; in nine cases the first portion was slightly cloudy, the second clear so that we could soon go on to local treatment, which, owing to the severe local symptoms, had been hitherto impossible.

There were nine negative cases. We regarded as such any which showed marked cloudiness of both portions of urine after five boxes of thyresol had been taken, *i.e.*, after twenty days. Five of these nine cases were complicated with catarrhal prostatitis, to which the delay in the cure must be attributed.

The preparation was liked, and we had no complaints of weight over the stomach, eructation, or other symptoms of irritation of the gastrointestinal tract. Nor did we observe any irritation of the kidneys, or erythema, although in many cases the preparation was taken for a long time (up to forty-five days).

If we may express an opinion, we think that thyresol has proved its value in acute as well as in subacute cases of urethritis and exacerbations of chronic urethritis, inasmuch as, without having observed any unpleasant symptoms, we were able to adopt local treatment in the course of two to two and a-half weeks. In this sense thyresol is quite equal to the other balsams, but is specially to be recommended where other anti-gonorrhœic remedies may not be tolerated, or are without effect. We have found the tablet form to be the most valuable. Gonorrhœa, as we know, is often accompanied by constipation, which has an unfavourable effect upon the course and duration of the disease. The combination of thyresol with mag. carb. aims at counteracting this effect.—*Clinical Excerpts.*

THERAPEUTICS.

Lead in Syrup of the Iodide of Iron.

The following notes indicate the importance and value of not allowing any unfamiliar peculiarity in a medicine to pass unexplained, or at least to pass without an attempt being made to explain it. A yellow deposit, which ought not to have appeared at all, came down soon after the following prescription was dispensed:—

R. Syr. ferri iodidi .. } aa ʒij
Aquam menth. pip. .. }

Misce.

Analyses showed that the precipitate in question consisted of lead iodide. Inquiries showed that the lead had somehow made its way into the syrup of iron iodide in the process of its manufacture, though precisely in what way was difficult to tell. It might have been a result of using lead enamelled pans, or even of storing the syrup in a vessel that was not clean; but the quantity of lead found suggested that either lead-contaminated

iron filings or else crude iodine had been employed in the manufacture of the syrup of iodide of iron. It is important to realise that the syrup itself can appear pure enough, being able to keep a quantity of lead dissolved. It is when the syrup is diluted that the lead comes down. Solutions of iodides have a solvent action on lead, complex salts resulting, and unless the lead be present in fair quantity even a dilution of the liquor with syrup remains quite free of deposit. When water is used, decomposition of the double iodide at once follows, and yellow crystals of lead iodide come down as in the above mixture.—*The Hospital*.

The Black Tongue Caused by Bismuth.

MR. WILLIAM DUNCAN has made some interesting investigations into the reason why some people suffer from blackness of the tongue upon taking bismuth salts in such mixture as the following:—

R. Glycerini acidi pepsini . . ʒij
Tincturæ nucis vomicæ . . ʒij
Liquorem bismuthi ad . . ʒiv

A black patch about the size of a sixpenny-piece upon the tongue was complained of on the third day after the mixture was begun. The patch steadily increased in size until a strip in the centre of the tongue was quite covered with what appeared to be bismuth sulphide.

It was suggested that tobacco-smoking might in some way be the cause of the deposit, but when the medicine was tried by two ladies who had never smoked, their tongues were blackened, even more quickly than were those of smokers.

Normal saliva has been described as containing traces of potassium sulpho-cyanide; but if the blackening is due to sulphur in the saliva it is curious that it should not occur equally in all, and that it should be mainly in the centre of the tongue.

Eructations of sulphuretted hydrogen or other sulphur-containing gas have been suggested; but after special observation upon a number of cases the conclusion arrived at was that the blackening is only met with when the tongue has been coated and foul, the mucus under this condition being apparently rich in sulphur. Blackness of the tongue after taking bismuth, therefore, is equivalent to foulness of the tongue in other circumstances.—*Ibid*.

LARYNGOLOGY.

Report of a Fatal Case of Status Lymphaticus after Operation for Tonsillar Hypertrophy.

• THOMAS J. HARRIS, M.D., New York.—The author reports a case admitted to his service in the Post-Graduate Hospital for operation for enlarged tonsils which were to be removed under local anæsthesia. An injection of a one-fifth of 1 per cent. cocain hydrochlorate in a normal saline solution containing 2 drams of 1/1000 adrenalin chloride was given, and on account of the loss of part of the first injection a second was given. He believes that about one-twelfth of a grain of cocain was retained and about 8 or 10 minims of the solution of adrenalin chloride. At the first injection the patient complained of feeling badly, vomited and had a slight convulsive seizure, presenting the appearance that is often seen with the local administration of cocain. Anæsthesia was prompt, and both tonsils were enucleated with the coldwire snare in about two minutes and without bleeding. During the operation the patient's head was supported by an assistant. After the removal of the tonsils the operator was struck by the pallor of the patient, and it was found that he was unconscious. Stimulation and artificial respiration were given for an hour, but without result. The autopsy showed a swollen right auricle which was dilated to about five times its normal size. The thymus gland was found to be enlarged, and weighed 18 grams. Microscopically, the gland showed no signs of atrophy, which is abnormal in a man of 30 years of age. The author believes that death occurred as a result of the enlarged thymus, and does not think that the amount of cocain absorbed could have been responsible, nor does he believe that the adrenalin was the cause, although he realizes the danger of adrenalin when taken in the amount given in this case.—*Medical Review of Reviews*.

Tonsils and Adenoids.

BY

CHARLES M. STEWART, M. D., M. R. C. S. (Eng.)

Assistant Dar, Nose and Throat Department, Toronto General Hospital.
Late Senior Resident Surgeon, The Throat Hospital,
Golden Square, London.

Founded on the experience of 7,000 cases.

In the second visceral cleft is developed an almost complete circle of lymphoid tissue. On each side of the pharynx is the faucial tonsil, at the base of the tongue and anterior to the epiglottis is the lingual tonsil,

above and behind the soft palate is the pharyngeal tonsil, commonly known as "adenoids," and at the pharyngeal orifice of the Eustachian tube is a considerable mass of lymphoid tissue known as the "tube tonsil" of Gerlach. The faucial tonsils or what are commonly known as the "tonsils" begin to develop during the fourth month of embryonic life, and at birth they are histologically complete. Their size increases until the age of three or four years, then normally they begin to atrophy, and this goes on till about the age of puberty when they are nearly completely gone.

The palatoglossus muscle, which forms the anterior pillar of the fauces, unites above in the soft palate with the palato-pharyngeus muscle which forms the posterior pillar of the fauces, and at the angle of meeting of these two arches the supra tonsillar recess is formed. In this second bronchial cleft lymphoid tissue develops from cells of the hypoblastic layer of the embryo.

At the junction of the foregut with the stomatodæum, that is the pharynx with the mouth cavity, a considerable constriction takes place. There are two folds of mucous membrane here that deserve special mention: One fold stretches across between the two pillars of the fauces just beneath the soft palate, and on account of its shape has been called the plica semilunaris. This fold forms the inner boundary of the supra-tonsillar recess. The other fold stretches across from about the lower half of the anterior pillar of the fauces to the most prominent part of the tonsil and this has been called the plica triangularis. If these two plicæ are well developed the tonsil may be almost completely hidden. The lingual tonsil is produced by a proliferation of lymphoid tissue from an accessory nodule at the base of the faucial tonsil.

Now from slight developmental peculiarities different clinical varieties of tonsils may be described.

(a) The imbedded tonsil. This is the normal type of tonsil in a child up to the age of three or four years. Looking into the throat you can scarcely see any tonsillar tissue, but on making the child retch, two globular masses come out below the soft palate and nearly touch in the middle line. This type of tonsil is hidden by the anterior pillar of fauces and by the two plicæ, namely semilunaris and triangularis.

(b) Sessile or flat tonsil is the normal type of tonsil found in middle life. If the tonsillar tissue of the young child is not subject to much inflammation it begins to atrophy after about the fourth year of life, so all that remains in middle life of the large tonsillar mass of the child is a few scattered masses of lymphoid tissue.

(c) If, however, the tonsils are subject to considerable inflammation after the fourth year of life, they enlarge instead of atrophying and this may go on until adult life. This inflammatory enlargement produces what is known as the prominent tonsil. It is due to a proliferation of the lymphoid tissue at the outlet of the tonsillar sac. These tonsils are easily seen when looking into a patient's throat. They stand out as if they were on a pedicle.

(d) Another type of tonsil is where the lingual prolongation is very well marked. The faucial and lingual tonsils seem to be a continuous mass of lymphoid tissue.

Anatomy:—The tonsils are masses of lymphoid tissue partially surrounded by a capsule and situated between the pillars of the fauces. The capsule is absent on the pharyngeal surface of the gland. Areolar tissue separates the capsule from the Superior Constrictor muscle of the pharynx. The pharyngeal surface of the tonsil is perforated by a number of orifices which lead into the tonsillar crypts. These crypts vary in number from eight to twenty. They are usually separate and pass completely down through the tonsillar tissue to the capsule. Rather more than half these crypts open in towards the pharyngeal isthmus, but the remaining ones open into the supratonsillar recess. If the plica semilunaris is well developed it is very difficult for this cryptic secretion to get free from the supratonsillar recess. Tonsillar calculi occasionally form from this retained material. Quinsies are also frequent in such cases. In some cases the supratonsillar recess extends down on the external surface of the tonsil into the areolar space between the tonsil and the Superior Constrictor muscle of the pharynx.

Blood Supply:—The tonsils are well supplied with blood. The chief arteries are the tonsillar branch of the facial artery and the dorsalis linguae of the lingual artery. Less important arteries are the ascending Palatine from the facial, the ascending pharyngeal from the External Carotid artery and the descending palatine from the Internal Maxillary artery. The nearest large artery to the tonsil is the facial artery. The Internal Carotid artery is fully three-quarters of an inch distant from the tonsillar capsule.

The venous blood from the tonsil is returned into a venous plexus situated just external to the tonsil. This blood in turn goes into the pharyngeal plexus of veins, and hence into the Interior Jugular.

The nerve supply to the tonsil is not very free. A special tonsillar twig comes from the glosso-pharyngeal nerve, unites with the pharyngeal plexus and from this the circulus tonsillaris is formed. This supplies

the mucous membrane covering the tonsil, the adjacent part of the soft palate and the pillars of the fauces.

The lymphatics of the tonsil are very important. The efferents from the tonsil pass to the submaxillary group of glands. From there some lymph goes to the superficial lymph glands around the External Jugular vein, but the most of it goes to the deep lymphatic glands around the Internal Jugular vein. The lymphatics from the adenoid tissue in the nasopharynx go to the upper deep cervical set of glands. So in both cases the lymph eventually gets into the lymph glands along the Internal Jugular vein. If septic absorption then takes place from the tonsil, the glands at the angle of the jaw and down the neck soon become enlarged and tender to the touch. It has been demonstrated that if a sterilized emulsion of black pigment be injected into the tonsillar tissue, it can afterwards be traced into the lymphatic glands along the lateral wall of the pharynx, hyoid bone, larynx and along the deep vessels of the neck. It can be found in the bronchial and mediastinal glands.

Physiology:—No definite function has yet been satisfactorily proven for the tonsils and adenoid growths in the naso-pharynx. However, there are several facts in connection with their life-history that are very suggestive. The tonsils begin to develop during the fourth month of foetal life, which would suggest that their function is not a very vital one. Tonsils and adenoids may be completely removed from a child three or four years old, and the system knows no harm. Even nature tends to remove this lymphoid tissue by a slow process of atrophy, beginning about the end of the third year, and finishing about the age of puberty. So whatever their function may be it is confined to the first few years of life. The position of the tonsil is full of significance. Placed as it is at the entrance to the respiratory and digestive systems, it must be there for some reason. It is a well known fact that young children tend to put every thing in their mouth that they get their hands on, and also that they have a total disregard for bad odors and poisonous gases. Nature then to protect the life of the young has placed a ring of lymphoid tissue at the entrance to the body to absorb poisonous gases and destroy harmful organisms. As the child grows older, intelligence increases, and so there is not the same necessity for this lymphoid tissue in the throat and so it disappears. The scientific world to-day is very much interested in immunity, and the tonsils have been investigated along this line. The tonsillar crypts have been likened to culture tubes, the mucus they contain to culture medium, and from their very position they are always exposed to many different kinds of bacteria. So by a biochemical process antibodies, etc., are produced and so immunity. Naturally it is in early

life that immunity from different diseases is required. So after this function is fulfilled they disappear. Of course immunity is only a relative term. Why some people take many infective diseases and others do not, we cannot say. This immunity theory makes a nice picture, but there is not sufficient proof yet to accept it.

Many other functions have been attributed to the tonsils. One, that they produce an internal secretion like ductless glands, another that they aid in salivary digestion. By others they are considered to be a great source of the leucocytes in the young.

Indications for the removal of tonsils.

(a) *Local Conditions*:—Occasionally, apparently healthy tonsils require to be removed only on account of their enormous size. Their presence interferes with respiration and deglutition to such an extent as to be a serious hindrance to health, and even life itself. I once saw a child of four years old brought to the Hospital cyanosed and in great respiratory distress. The only thing that was found wrong was enormously enlarged tonsils and adenoids. They were immediately removed, no anæsthetic being given. Within a very short time the child was a good color and quite happy. Often children with enlarged tonsils make a peculiar noise when eating; this is relieved by removing the tonsils.

Frequent attacks of tonsillitis are an indication of unhealthy tonsils. The crypts become filled with septic material and quinsy or some variety of tonsillitis occasionally develops. Diseased crypts keep up a chronic inflammation of the tonsils as indicated by a continual aching pain in the throat, or an occasional sharp shooting pain up towards the ear. In these cases the breath is usually offensive.

The organisms usually found in diseased crypts are staphylococcus, streptococcus and occasionally the pneumococcus. Tubercular ulceration of the tonsillar tissue is very rare, and when present is usually associated with phthisis. Some authorities state that tubercle bacilli and giant cells can be demonstrated in from 4 to 10 per cent. of all tonsils removed.

(b) *Constitutional Conditions*:—The close relationship between tonsillitis, rheumatism, chorea and endocarditis has been well known for many years, but it is only recently that the close relation between rheumatism and arthritis has been proven to be associated with septic tonsils. This can best be demonstrated in young adults and people in middle life. They come complaining of considerable pain about the tonsils, offensive breath, and rheumatic pains all over the body, particularly in the larger joints, such as the knee and shoulder. On investigating the tonsils you

find they are not large, but in the crypts is an offensive cheesy material, especially the crypts that open into the supratonsillar recess. These tonsils are inflamed and fibrous when probed. Completely remove these tonsils by enucleation and in a short time the patient will tell you that the rheumatism has disappeared. From this one sees that a diseased tonsil is a portal to systemic infection. On operating on such tonsils they must be entirely removed. Slicing off a piece of the tonsil with a guillotine is worse than useless, for by so doing you remove considerable normal epithelium and only a small portion of the tonsillar crypts which are the foci of infection.

The close relationship between tuberculosis and diseased tonsils has long been established. Frequently have I noted in strumous anæmic children with enlarged glands in their neck that their tonsils are large, soft and the crypts full of a caseous material. Undoubtedly the glands in the neck were infected by way of the tonsils. It is good practice to advise the removal of all diseased tonsils whether they are large or small, and particularly, should this be done where there is a family tendency to tuberculosis.

Exanthematous Fevers:—Children with enlarged tonsils and adenoids are very prone to contract scarlet fever and diphtheria, if they are exposed to the specific virus. It is reasonable to suppose that infection takes place through some fissure in the tonsillar epithelium. So the larger and the more diseased the tonsils are the more likely is this individual to take these infectious diseases if exposed to them: acute suppuration of the middle ear is almost sure to occur during the course of these diseases if the child has enlarged tonsils and adenoids. Also the patient's chance of ultimate recovery from a bad attack of either scarlet fever or diphtheria is much lessened by the presence of enlarged tonsils and adenoids. The respiratory system is handicapped from the very beginning. So children who are likely to be exposed to infectious fevers should have their throats cleared out early.

Nocturnal Incontinence:—An increased amount of adenoid tissue had been associated with enuresis of children almost since the discovery of these post-nasal growths. It seems to be one of these things that text-books copy from one another. True, children troubled with nocturnal incontinence occasionally have adenoids, but the removal of these growths rarely, or I may say never, cures the enuresis.

It has lately been pointed out that thyroid extract in small doses is very effectual in curing this pernicious habit.

Ear Conditions:—No treatment for chronic suppuration of the middle ear is likely to effect a permanent cure if there are present in the

case enlarged tonsils and adenoids. The pharyngeal orifice of the Eustachian tube is continually kept swollen and congested by the adjacent adenoid tissue. Even if there are enlarged tonsils and no adenoids, the enlarged tonsils push the posterior pillar of the fauces backwards and so up against the region of the Eustachian tube. This is particularly the case if the tonsils are imbedded.

Chronic middle ear catarrh is much relieved by the removal of enlarged tonsils and adenoids. This lessens the tendency to rhinitis and colds in the head and so lessens tubal congestion. Chronic otalgia is a symptom that many children with enlarged tonsils and adenoids complain of. It is nearly always relieved by clearing out the throat of the lymphoid tissue.

Children suffering from adenoids are mouth-breathers. They snore during sleep or at least breathe heavily. They have a chronic rhinitis with frequent acute exacerbations as evidenced by a copious watery nasal discharge. These patients are slightly deaf, but this symptom is marked when the patient has an acute cold in the head. The ear drums on examination are anæmic and indrawn.

To positively diagnose adenoid vegetations it is necessary to either see or feel them. It is usually impossible to see them under 6 years of age. However, over this age, by tactful management of the child, it can usually be accomplished, a post-nasal mirror being used. To make a digital examination, the patient should sit on a stool or low chair. The surgeon stands by the right side of the patient, and the nurse should hold the hands of the patient. The child is asked to open the mouth widely and the left fore-finger of the surgeon presses the cheek, between the teeth. The right index finger is quickly passed in the mouth to the posterior pharyngeal wall and then up behind the soft palate. Feel first for the posterior border of the septum nasi, and the posterior choanæ, one on either side of it. Next pass the finger upwards, backwards, and laterally. The amount of adenoid tissue can be estimated in this way. The fossæ of Rosenmüller should be explored at the same time. A little bleeding often follows the examination, and is in proportion to the amount of trauma used, and the amount of adenoid tissue present.

Neglected tonsils and adenoids produce very serious results. Examine a marked case in a child say about 12 years of age. It is a pitiable sight. The child that might have been mentally and physically well-developed has the appearance of an idiot. The child goes about with an open mouth, listless expression, and is dull of hearing. The face is pale, long and narrow. On closer examination considerable facial deformity may

be recognized. The upper alveolar arch is V-shaped instead of the normal U-shaped arch. The hard palate is high and narrow. When the mouth is closed the upper incisor teeth project in front of the lower ones about half an inch so that a finger might be placed between the teeth and not injured even when the molar teeth are tightly closed. Such a condition has been termed open-bite. Adults with enlarged tonsils usually have no adenoids. The chest presents a transverse constriction known as Harrison's sulcus, and the sternum is very prominent, producing what is known as pigeon-breast. These chest conditions are produced by nasal breathing during sleep, and are more marked when the tonsils are enlarged as well as the adonoid tissue in the naso-pharynx. At an early period in life the ribs are soft and pliable.

Operation.—Removal of tonsils and adenoids.

It is a difficult operation to do properly. The field of operation being so hidden from view, the laity are compelled to judge the thoroughness of the operation by the amount of blood produced. Occasionally a mother will venture an opinion that one tonsil is yet a little large or that the child still snores. The doctor dispels her fears by telling her the tonsil will soon disperse or the snoring now is only a habit and will soon go.

As the operation is not one of emergency, due preparation should be made for the anæsthetic, and for the sterilization of the instruments used. Probably no operation in surgery has so frequently ended in disaster as this one. The combination of anæsthetic and blood in the throat makes it so serious. The surgeon and the anæsthetist must both be very much on the alert during the short space of time of the operation. The patient's throat should always be inspected immediately before operation and the temperature taken if you are suspicious of fever. Although you may have seen the child two or three days previously and arranged the operation for a fixed time, yet the child may have contracted diphtheria, scarlet fever or measles in the meantime. Make it the exception to operate if the temperature is over 99°.

*Anæsthetic:—*The patient should have a purgative the previous night. A child may have compound liquorice powder and an adult a cathartic pill containing a grain of calomel.

This is the operation *par excellence* where surgeon and anæsthetist should know how to work together. In no operation can the anæsthetist be more useful to the surgeon than this one. For this reason the surgeon always prefers to have the same anæsthetist. For the removal of adenoids alone, any anæsthetic that will produce anæsthesia for about one and a

half minutes is all that is necessary. Gas or gas and oxygen does nicely, or chloroform and ether equal part by weight. For the double operation, that is, the removal of tonsils and adenoids, a much longer anæsthesia is needed. I prefer a mixture of chloroform and ether, equal parts by weight. As ether by the open drop method is so safe, and produces no congestion of the veins of the head and neck, no doubt it will be used a great deal in the future. One disadvantage of it, is the length of time to produce anæsthesia. Whatever anæsthetic is selected, you obtain a considerably longer period of anæsthesia if you continue to keep the patient "under way" for three or four minutes before beginning the operation. Ethyl chloride for this operation is not good. It is unsafe, and also congests the veins of the head and neck. Although I have never seen a death with it, yet it often gives a good deal of trouble.

*Local Anæsthetic:—*Used chiefly for adults. By it tonsils can be removed with very little discomfort to the patient. However, if the patient is very nervous, a general anæsthetic is preferred. I prefer to remove both tonsils at the same sitting. Frequent operations under local anæsthetics are not to be advised in nose and throat work.

Swab the tonsils, pillars of the fauces, soft palate and posterior pharyngeal wall with 20 per cent. cocaine solution. Warn the patient not to swallow any of the solution. A patient can stand a great deal of cocaine without any ill effects, if none is swallowed. The thorough cocainization of the pharynx and soft palate prevents the patient from coughing and retching during the operation.

Then inject with a special syringe 30 to 40 minims of a 1 per cent solution of cocaine hydrochloride for each tonsil. Inject 10 minims under the mucous membrane in four different areas. These areas being the middle of the anterior pillar, the upper part of the anterior pillar on a level with the base of the uvula, the middle of the posterior pillar and high up between the two pillars in the supratonsillar recess.

The same amount of a 3 per cent. solution of the lactate of cocaine may be used. It is less toxic, and also less effectual in relieving pain. A useful combination to inject is 30 minims of the following solution:—

T. Rx. Cocaine Mur.	..	..	..	..	40 grains.
Atropine Sulph.	..	..	..	..	1-3 grain.
Resorcin ..	..	..	..	..	1 drachm.
Glycerine ..	..	..	..	..	4 drachms.
Carbolic acid ..	..	..	..	..	5 grains.
Listerine ..	..	..	..	..	4 drachms.
Aqua Destillata ad	..	..	..	..	8 ounces.

The Technique of the Operation.

Treat the tonsils the same as you would treat diseased lymphatic glands in other regions of the body, and when operating on them remove them entirely. The day for the tonsillotome is nearly over, except in special cases; I would not advise the use of the tonsillotome in a patient over 14 years of age. Slicing a piece off the tonsil is very bad practice. Every operator who has done many of these operations has his own fixed ideas about instruments to be used, and the position of the patient during the operation. Our aim should be to completely remove both tonsils and adenoids with the least possible danger to our patient. Anything that increases the length of the operation increases the danger. Too many instruments are a nuisance. After trying every possible variety of operation, I will now describe more or less in detail what I consider the best method in each particular case.

Operation for Adenoids only:—Patient on the back and in a horizontal position. The instrument I like is a caged curette, St. Clair Thomson's modification of Delstanché's. They are made in four sizes, each a different width, and by selecting the proper width for different ages you are always able to just pass the orifices of the Eustachian tubes without injuring them. One sweep in the ~~operation~~ ^{operation} will remove the main mass of the adenoid ~~tissue~~, and with the caged curette the growth is at the same time removed from the throat, and prevents its being swallowed or going down into the larynx. The patient should then be immediately turned on the right side to allow the blood to run out of the mouth, and now the operator should introduce his finger into the nasopharynx. If adenoid tissue is left in the fossæ of Rosenmüller, it is easily removed by Lowenberg's bullet pointed forceps. Tieman, of New York, makes a very nice-shaped one, with a curve that allows it to pass behind the palate. Any lateral curetting in the naso-pharynx is dangerous and unnecessary. By removing the central mass and what is in the fossæ of Rosenmüller the small amount of lymphoid tissue that is around the orifice of the Eustachian tube will atrophy on account of its blood supply being greatly reduced.

Removal of Tonsils and Adenoids:—The patient is under a general anæsthetic and in the horizontal position with the head slightly lower than the rest of the body. It is an advantage to have a small flat sand pillow under the shoulders. Now if the tonsils are prominent and the pillars of the fauces not adherent to the tonsils, I would remove the adenoids first, the patient being on the back, then immediately turn the patient on the right side and remove the tonsils by feel, using a Heath's

(modified Mackenzie's) tonsillotome. The tonsils must be well pushed in by pressure behind the angle of the jaw by the anæsthetist. The lower tonsil should be removed first. With practice the tonsils can be completely removed in this way. Light anæsthesia is best, the cough reflex being retained. Testing the corneal reflex is of very little use in children.

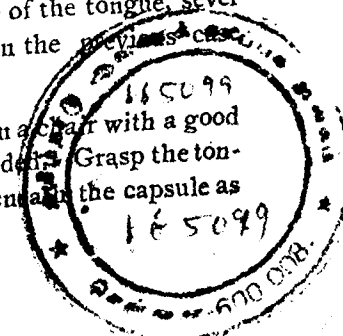
The total length of the operation will vary from one to two minutes.

For Imbedded Tonsils:—The patient under anæsthetic and on the back, the head slightly on the side towards the operator, apply the tongue depressing forceps and give them to the anæsthetist to hold. Grasp the tonsil with a volsellum and pull it well towards the middle line. Then with a long dissecting forceps make an incision just external to the internal edge of the anterior pillar of the fauces, making the incision the whole length of the tonsil. Then by a little pressure made with the dissecting forceps, you find that you are beneath the tonsillar capsule and that the gland will shell out very readily. Now free the top and bottom of the tonsil a little, keeping outside the capsule. This freeing of the top and bottom makes a depression for the snare to engage in. Slip the loop of the snare over the volsellum and around the tonsil. Gently tighten the snare and the tonsil is removed completely with its capsule intact. As the loop of the snare is tightened it passes in the direction of the least resistance, and that is in the areolar space between the tonsillar capsule and the Superior Constrictor muscle of the pharynx. In this case remove the adenoids last. There is very little bleeding, as the severed arteries retract into the substance of the Superior Constrictor muscle. The total length of the operation varies from 5 to 10 minutes depending on how well the anæsthetic is taken. The cough reflex should be abolished.

For Flat or Sessile Tonsils:—This variety of tonsil is usually found in adolescence and in middle life. There is frequently a marked lingual prolongation, and if so it should also be removed. In this case, free the tonsil as in the previous type of case, and shell it out from top to bottom. A nice instrument for doing this is a blunt pointed scissors curved on the flat. In adults, if the anterior pillar is widely attached to the tonsil by the plica triangularis, Leland's tonsillar knives are useful in freeing it. When you have the tonsil well freed down to the side of the tongue, sever the tonsillar tissue by the use of the snare. As in the previous case, there is very little bleeding.

Local Anæsthetic:—The patient to be sitting up in a chair with a good head rest. Apply the anæsthetic as above recommended. Grasp the tonsil with a volsellum; put it well inwards, and get beneath the capsule as

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stated in the previous cases. Sometimes in adults when local anæsthesia is used, it is less painful to fix the tonsils from the anterior pillar by using special tonsillar knives.

After Treatment:—The patient in all cases should remain in bed for at least 24 hours, and a day or two longer if there has been much bleeding. The less fussing and spraying of the nose and throat the better. Ice to suck for the first two hours relieves the pain and tends to stop the bleeding. The food for the first 24 hours should be cold. Ice cream, custard, or cold bread and milk are all nourishing and easily swallowed. The second day, the temperature is frequently up a degree or two, but usually means nothing serious. Enquire for canache. Adults usually complain of a good deal of pain on swallowing after the removal of the tonsils. This may continue for 4 or 5 days. A purgative on the second day should be given. For children there is nothing better than castor oil.

Hæmorrhage:—(1) *Primary.*—Rarely does bleeding give much trouble under 14 years of age. The tonsils that bleed are the small fibrous ones of adults. Frequent inflammation has caused an undue amount of fibrous tissue, and the arterial walls are prevented from contracting as they normally would. In young adults you often see large, red, soft tonsils. These do not bleed much, as the original relative amounts of lymphoid and connective tissues are maintained. The use of the snare reduces bleeding to a minimum. After the operation is completed a careful examination of the throat should be made. If any adenoid tags are present remove them. They are usually indicated by persistent conghing. Sponge off the face and neck with a marine sponge out of ice-cold water. The cold tends to waken the child out of the anæsthetic and excites deep respiration, and so arrests the bleeding.

If the bleeding continues after the operation is over, make another careful examination of the throat and decide where the blood is coming from. It may be a persistent capillary oozing. If so, apply pressure in the tonsillar sinus by means of a gauze sponge tightly rolled and held in place by a forcep. If necessary, moisten the sponge in hydrogen peroxide. The bubbles that form seem to act mechanically in obstructing the capillary endings. Adrenalin chloride is of little use. It is an excellent drug to prevent bleeding, but is almost useless in stopping it. Secondary hæmorrhage often follows its use. If the hæmorrhage still continues take:

Mr. T. Mark Hovell's Tannic acid, 3 parts.
paste. Gallic acid, 1 part.

Mix these two powders. Then with a pestle and mortar make up a putty-like mass by adding a small quantity of water to a quantity of this

powder. Now imbed the right index finger in this mass and rub it firmly over the bleeding tonsillar area. It usually stops the bleeding immediately, and as it can be quickly done it is not very disagreeable to the patient.

A patient who is bleeding, or has been bleeding, should be very carefully watched. The patient will not bleed to death by capillary oozing except in hæmophilic cases. The hæmorrhage produces syncope with weakened heart's action, and so the bleeding stops. The patient must lie down head considerably higher than the rest of the body, and over nearly on the face with a suitable basin under the mouth. The patient must be specially warned not to swallow the blood. Often have I seen patients not spit out any blood, and the first indication that the nurse had that hæmorrhage was going on was when the patient vomited 2 to 3 pints of bright red blood.

If necessary to keep the patient quiet give, hypodermically, a good dose of morphia. Calcium lactate may be given per rectum, one drachm every 3 hours for 3 doses. If the volume of the pulse becomes very small and interstitial saline may be indicated, and in extreme cases saline intravenously. Normal saline enemata are also very useful.

For a Spurting Vessel:—Clear away all the blood and clots in the tonsillar sinus and pick up the bleeding point by a Mixter's artery forceps. Do not attempt to ligate the vessel, for you will give the patient a great deal of unnecessary annoyance and in the end fail to get the ligature on the vessel. The forceps is not very uncomfortable in the mouth, and it may be removed in four hours. I have had over 25 cases of severe tonsillar hæmorrhage and they all recovered. The tonsillar clamp was never applied nor was the External Carotid tied. I think both these methods quite unnecessary.

Secondary Hæmorrhage:—Hæmorrhage after the first 24 hours is not common. When it does occur it is usually in adults who have had considerable primary hæmorrhage and where the primary hæmorrhage was arrested by the formation of a blood clot in the tonsillar sinus. The patient so reduced by the primary hæmorrhage does not stand the loss of blood well the following few days.

Case:—A girl aged 10 years, delicate and anæmic. Tonsils and adenoids were removed at 10 a.m. The tonsils were removed by a guillotine. There was considerable hæmorrhage at the time, but it was soon arrested by the ordinary means. At 6 p.m. the child was allowed to leave the hospital and go home as there was no more bleeding, and the patient was in fair condition. After getting home the patient was put

to bed and remained there the next day. During the second day, the child took considerable fluid nourishment. Early next morning, that is about 46 hours following the operation, the patient began spitting out some blood and shortly afterwards vomited up a large quantity of blood. A doctor was immediately sent for, but the child died before he arrived.

Acute Suppurative Middle Ear:—In hospital practice it occurs in about 1 per cent. of cases operated on. In 500 cases that I took notes of, it occurred 6 times. As far as could be ascertained, these cases had never any previous aural discharge. It is usually cured in a short time by suitable treatment.

In hospital practice doubtless a great many of the operation cases go to unsanitary homes. It is surprising that suppuration of the middle ear is not more common. Trauma to the Eustachian tube predisposes to it. Too much fingering in the naso-pharynx is not good. A lengthy operation increases the risk of blood getting up the Eustachian tube to the middle ear, and then suppuration is likely to follow.

Patients should be warned when blowing their nose not to obstruct both nostrils at the same time. In this way blood and purulent discharge is prevented from being forced up into the middle ear. Tags of adenoids increase the discharge in the naso-pharynx, and if they become septic, middle ear suppuration may follow.

Case:—A boy, age 7 years. Never had any previous aural discharge. Tonsils and adenoids removed. Earache followed on the 4th day, and aural discharge shortly afterwards. Streptococci found in the discharge. Child brought to the hospital on the 8th day following operation. An acute mastoid abscess was present, and was operated on immediately; perisinus abscess was also found. Lateral sinus was not thrombosed. Two days later, the child had a rigor and temperature went up to 106°. Wound opened up, sinus was now thrombosed. Internal Jugular vein was ligated in the neck. Child died on the 15th day after the removal of tonsils and adenoids. The cause of death was meningitis.

Septicæmia:—This is a very rare complication following the removal of tonsils and adenoids. Occasionally the temperature may go up to 101 and 102° and remain up for two or three days. This is due to septic absorption from the fresh wound in the throat. The lymphatic glands in the neck may become enlarged and tender. The best treatment is free purgation, liquor ferri perchloride internally, and a coarse hydrogen peroxide spray for the throat.

Too vigorous use of the adenoid curette low down on the pharynx wall may open up the retro-pharyngeal space. If so, sepsis may follow and give considerable trouble.

Case:—A man, age 23 years, had his adenoids removed by a caged curette. Retro-pharyngeal space was opened up on account of the patient jumping about during the operation. Gas was the anæsthetic. Five days afterwards the patient was admitted to the hospital with a very sore throat and temperature 103°. The next ten days his temperature was between 103° and 105°. He was treated by a cold pack and given polyvalent anti-streptococcus serum. Patient made a good recovery.

Pyæmia:—This is a very rare condition. Should acute otitis media and lateral sinus suppuration follow the removal of tonsils and adenoids, then it is easily seen how pyæmia might occur, but when there is not aural or lateral sinus trouble it is difficult to see how it could occur.

Case:—A child 8 years old. Very much enlarged tonsils and adenoids were removed. Child made an uneventful recovery until the 9th day following operation. There was never at any time aural discharge or enlarged or tender glands in the neck. The ninth day the child complained of pain in the right thigh, and in three days afterwards in the left thigh. There was phlebitis of both femoral veins, and an abscess was opened in each thigh. Five months afterwards there was another abscess in the left arm. The case eventually made a good recovery. I am inclined to think it had no relation to the operation for the removal of tonsils and adenoids.

Probably no operation in surgery is so abused by the unskilful and also unnecessary removal of tonsils and adenoids. But when properly done and in suitable cases, the results are most satisfactory. The child's intellect, hearing and bodily welfare are preserved.

List of Instruments Used.

7½" dissecting forceps.
Doyen's gag.
St. Clair Thomson's adenoid curette.
Heath's tonsillotome.
Farlow's snare.
Mixer's artery forceps.
Leland's tonsil knives.
Lowenberg's post nasal forceps.
Author's tongue depressing forceps.
Tilley's raspator for tonsil resector.
Andrew's volsellum.

—*The Montreal Medical Journal.*

TOXICOLOGY.

An Unusual Case of Poisoning By Phenazone.

THE following account of a case of poisoning by an extremely small dose of phenazone should interest all medical practitioners as an illustration of the idiosyncrasy which exists in a few people to this commonly used drug. Some little time back I received an urgent call to go and see a young man who had collapsed in the street almost at his own doorstep. On hurrying round to his house I found that some friends had carried him inside and had placed him on his back on the floor, where he was lying in a semi-conscious state.

He was a well-nourished vigorous, powerfully developed young adult of twenty-five, and had been a farmer before coming to London. He had been at work all day until tea-time and had neither eaten nor drunk anything which could in any way account for his condition, having dined off a steak and taken no stimulants all day.

Feeling a twinge of toothache about four o'clock he had gone to a chemist, asked for something to relieve it, and had been given 7 grains of phenazone. This he took in some water and shortly afterwards proceeded to his home (about five minutes' walk). Before he got there, and within twenty minutes of taking the draught, he had collapsed in the street and been carried indoors. When I saw him his condition was as follows:

He was barely conscious, just making some sort of vague reply to a loud inquiry as to what he felt amiss. The face and hands and feet were greatly swollen and covered with great beads of clammy sweat. The pulse was barely perceptible at the wrist and the heart sounds were faint and indistinct. His face was extremely swollen, so much so that when I saw him out two days later I should not have recognised him again. Owing to the urgency of his condition the temperature was not taken, but it was doubtless subnormal.

Strychnine, gr. $\frac{1}{30}$, was injected subcutaneously, a mustard poultice applied to the præcordia and a capsule of amyl. nitrite applied to the nostrils. Owing to the possibility of some other drug having in some way been absorbed, emetics were also given to clear out the stomach.

In about half an hour he had begun to regain consciousness and vomiting then became the most prominent symptom, coupled with violent abdominal pain and cramps, the symptoms resembling those of an acute irritant poison, or—except that there was no diarrhœa—of Asiatic cholera.

Although his condition gradually became less urgent, these symptoms, especially the vomiting, continued all through the night and until the early hours of the next day. The swelling of the face and hands gradually subsided, and the pulse recovered its normal tone. There was no rash at any time. Not until the third day was he able to go about and resume his ordinary diet.

As the patient and his friends were naturally in a state of great alarm at the case, the vomit was at once kept sealed and sent for analysis. Only a reaction for phenazone was obtained. The bottle from which the drug was sold had been in constant daily use for months past and was purchased from a well-known firm of druggists, so that any error seemed out of the question.

Several cases of severe symptoms following the administration of large doses of phenazone have been recorded. These generally are those of collapse with sometimes urticaria.

Thus a case is reported of a man taking 15 grains three times a day for five days in succession and then collapsing with an almost imperceptible pulse, clammy sweats, &c. But so far as I can ascertain no one has yet experienced alarming symptoms from a modest 7 grains. It sounds almost incredible were the facts not so clear and indisputable as to the amount. Moreover the symptoms such as the vomiting, abdominal pain, cramps, and swelling of the face remind me, most forcibly, of some acute irritant.

Altogether the case presents features of so unusual a nature that it is well worth recording as a striking example of idiosyncrasy to the drug.—*Clinical Excerpts.*

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THE ANTISEPTIC.

FEBRUARY, 1910.

Medical Registration and Reform in India.



LORD Morley's Despatch on Medical Reform has brought that matter within the sphere of practical politics. And the press comments on that dispatch in India have clearly shown that the public have grasped neither the intention nor the significance of the Secretary of State's pronouncement. A resolution passed at a meeting of medical men held in Bombay some days ago about medical registration also shows the existence of vague ideas about the object of medical registration.

We shall deal with medical registration first. The object of medical registration is set forth in the preamble of the Medical Act of 1858 thus :—

“Whereas it is expedient that Persons requiring medical aid should be enabled to distinguish qualified from unqualified Practitioners: Be it therefore enacted, &c, &c.”

That is clear enough, but it is contended by the Bombay Medical Association that Hospital Assistants should not be eligible for registration. They also want Military Assistant Surgeons to be kept out of the Indian Medical Register of the future. The Bombay medical men say that the qualifications of these two classes of medical men are not high enough. No doubt their qualifications are not as high as those of University graduates. But neither is the L.S.A. of London as high a qualification as the M.D. of London, and yet the holders of both those qualifications find their places in the British Medical Register. If the Hospital Assistants and the Military Assistant Surgeons are not entitled to find places in the Indian Medical Register, then they must be declared to be ‘unqualified.’ If they are unqualified, they ought not to be allowed to practise; at all events they ought not to be employed by the State.

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THE ANTISEPTIC.

And if the State dispenses with the services of these men whom Bombay Medicos want to stamp as unqualified, then the work of Medical Departments in India will be practically at a stand-still, because it will not be a very easy thing to replace the several thousands of Hospital Assistants employed all over India. In our opinion the proposal of the Bombay Medical Association is both unreasonable and impracticable. If it is felt that the standard of the examination for Hospital Assistants and Military Assistant Surgeons, as at present existing, is too low then the proper remedy would be to improve the standard. The Hospital Assistants form an exceedingly useful class of general practitioners, and no object will be served by making them out to be unqualified men, which will deprive them of the opportunity of calling in consultation their professional superiors. But the proposal to disqualify Hospital Assistants and Military Assistant Surgeons is made under the impression that members of those classes may get some of the appointments which may be thrown open to Indians under the proposed reforms. There is the old craze for appointments again! Who ever said that Indians are going to be given more appointments in the Medical Service? Lord Morley wishes to encourage the development of an Independent Medical Profession in India. It is an excellent idea, and we cordially approve of it. But how can you have an independent medical profession if almost every Indian who possesses a decent medical qualification is to be made a Government Servant? That will be the means of creating a “dependent” medical profession.

Lord Morley's position is quite clear. His Lordship wants the number of members of the Indian Medical Service to be reduced. The reduction can be effected in two ways. In the first place, by organising a Sanitary Service for India the members of the Indian Medical Service will be relieved of the sanitary duties which they are now called upon to do. That in itself will enable a considerable reduction in the number of members of the Indian Medical Service. And in large cities where capable medical men are available to undertake the duties of Hospital Surgeons and Physicians without any remuneration for such work, like the Hospital Physicians and Surgeons in England, a further reduction of I. M. S. officers is possible. The professorships in the various Medical colleges in India ought also to be taken out of the hands of the members of the I. M. S. The professors in the Medical colleges ought to be specialists in their subjects, and ought to be recruited from the open profession, irrespective of their nationality or any service to which they may belong. They ought to be highly paid, and once a professor is appointed to a chair, he ought to be allowed to hold his

essorship till he retires. For a long time to come such professors will be brought out from Europe. This reform is absolutely necessary if the teaching in the Medical colleges is to be efficient. Any one may copy out pages after pages of a standard work on any subject and read them out to his students. He does not become a professor thereby, nor does his performance deserve the name of lecture.

Next to the reform of the Medical colleges we would place the formation of a Sanitary department. The members of the Sanitary department ought all to be qualified medical men who should also possess a special qualification in Public Health. They should be paid well and ought not to be allowed to take private practice. Members of the Indian Medical Service who possess Public Health qualifications may be appointed to this as the local Government thinks fit. But others who are appointed to this department ought to be recruited by open competition held simultaneously in England and India, the selected candidates being compelled to undergo training in England for one year before joining the department.

As to medical men who are required to man the Hospitals, no one ought to be permitted to have both pay and private practice. We have already said that private medical men who may be appointed to the staff of a hospital in the city where they are practising ought not to receive any pay for their hospital work. It has been objected to that the Government cannot have any control over men who do not receive a Government salary. The objection is pure nonsense. Have the Government no control over the Chairmen of District Municipalities who receive no pay?

And as for the members of the I. M. S. who are appointed to the staff of a Hospital, they ought to be allowed the option of drawing their full pay or liberty to take private practice with a small allowance. This is the rule in many of the colonies such as the Straits Settlements and Federated Malay States, and it may, with advantage, be adopted here, as it is absolutely essential to ensure the growth of an independent medical profession. Fair competition is what is required for the growth of an independent medical profession, and we cannot have fair competition as long as the independent practitioner has to compete with the "bounty fed" members of the I. M. S.

It must also be remembered that the I.M.S. is open to Indians, and it is quite possible for a graduate of any of the Indian Medical colleges to go to England, obtain a British Medical qualification, and get into the

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I. M. S., all within three months. For medical men who have a long experience for salaried appointments the best course to pursue is to go and compete for the I. M. S.

We have sketched out the bare outlines of medical reform as we understand it. And if we may throw out a suggestion to the Madras Government—Why not make a start on a small scale and appoint a staff of Honorary Surgeons and Physicians recruited from among the medical practitioners in Madras for both the Royapettah and Monegar Choultry Hospitals, the I. M. S. officers attached to those Hospitals retaining the administrative control over those Hospitals exactly like the Senior Medical Officer of the General Hospital? This is only a suggestion. We think the experiment worth trying. We make a present of the idea to the Madras Government.

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The Polyclinic. The Bristol Medico-Chirurgical Journal. The Medical Brief. The International Journal of Surgery. The California Medical Journal. The American Journal of Clinical Medicine. The Dietetic and Hygienic Gazette. The Good Health. The Indian Medical Gazette. The Practical Medicine. The Sanitary Record and Journal of Sanitary and Municipal Engineering. The Northumberland and Durham Medical Journal. The Canada Lancet. The American Journal of Ophthalmology. The China Medical Missionary Journal. The Medical Review of Reviews. The Post Graduate. The Therapist. The Canadian Practitioner and Review. The Australasian Medical Gazette. The Caledonian Medical Journal. The Montreal Medical Journal. The Louisville Monthly Journal of Medicine and Surgery. The Monthly Cyclopædia of Practical Medicine. The Buffalo Medical Journal. The Ophthalmoscope. The Dental Era. The Interstate Medical Journal. The Medical Notes and Queries. The Calcutta Medical Journal. Folia Therapeutica. The All-India Hospital Assistant's Journal. The New York State Journal of Medicine. The International Therapeutics. The Hospital. The Medical Review. The Medico-Surgical Journal. The Journal of the Out-Door Life. Bulletin Journal of the New Animal Therapy.

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Let us again turn to our hypothetical fracture of the tibia and fibula.

The man probably reaches the doctor with his injured limb secured by some first aid method.

It is wise to retain these until his bed has been prepared. This
Vol. V. and the usual spring mattress avoided.

should be placed over the frame of the bed under-
obtain a well padded but unyielding

Original

THE RATIONAL TREATMENT OF FRACTURES
BY

J. BERNARD DAWSON, M.B., B.S., F.R.C.S.

*Late House Surgeon to St. Mark's Hospital for Diseases of the
Rectum, London.*



HERE has, during the past five years, been growing up a
distinct reversion from the time-honoured and classical
method of treating broken bone. The system of complete
and prolonged immobilisation by means of mechanical
appliances has been criticised severely, and in many
cases abandoned.

Those of the profession who have had an opportunity of comparing
the results thus obtained with the results of the newer method are
convinced that the old plan of keeping the limb in a state of complete
fixation and disuse is wrong and harmful.

In hospital practice the old way must of necessity hold its sway,
for the exigencies of hospital work preclude any thorough usage of the
new method. Time, patience, beds and tractability on the part of the
patient are features which are at a discount in a busy hospital. When
every bed is in demand, the victims of broken limbs have to be
sent home as soon as possible; therefore, some form of retaining appara-
tus is applied to the limb, and the patient seen, at the most, once a
week.

What is the result of this treatment?

This question can be answered by briotor-tropi of the numbers of
patients with fractures of tibia and fibulae by a diffurs, at most, with

* Specially contributed grey matter of the simple, or, a.

Business Notices.

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All literary communications should be sent to the Editor, not confined to the bone itself, but to the soft tissue structures surrounding and within, for the sake of example, assume that we are dealing with a case, besides the broken bone, we have to deal with a damaged heterosseous membrane, lacerated periosteum, in addition to possible damage to muscle tendons, blood vessels and nerves. The immediate result of such an accident is the pouring forth of a great quantity of lymph which bathes the whole of the damaged structures in a pool of coagulated fluid which possesses the possibility of being organised into fibrous tissue. If such an event take place the muscles and tendons surrounding the fracture will be firmly united together by adhesions which will produce stiffness and limitation of movement, and which will yield and stretch only partially and after much painful manipulation. When the fracture is in the region of a joint, these difficulties are augmented by the possibility of adhesions forming in the joint itself. It is for such reasons that the after result of fractures has been so unsatisfactory in the past.

The object of the newer method is to assist the absorption of exudates, prevent the wasting of muscles and accelerate the union of the fractured bone.

It is no uncommon thing to find traces of fractures in the bones of dogs, which have undergone complete union without any treatment. A dog, when the victim of a broken bone, usually lies in the position of greatest comfort, and so long as he is provided with food does not make efforts at movement. Nevertheless, in spite of the complete absence of fixation apparatus, a good and well nigh perfect result may be obtained.

This principle of treatment of fractures; the early, regular massage and passive movement being the natural sequelæ of a simple fracture.

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Let us again turn to our hypothetical fracture of the tibia. The man probably reaches the doctor with his injured limb. he was by some first aid method.

It is wise to retain these until his bed has been prepared. The splint must be rigid, and the usual spring mattress avoided.

Fracture boards should be placed over the frame of the bed underneath the mattress so as to obtain a well padded but unyielding couch.

When the patient is comfortably settled upon this, the temporary splints should be removed, and the fracture examined. The leg should be well washed and shaved, and the fracture reduced with or without an anæsthetic as occasion may demand.

The leg should then be placed upon a back splint with a right angled foot-piece. This splint should rest 4 inches above the knee. To this the leg is bandaged with a flannel or crepe bandage, the toes being left free.

Two side splints, 4 inches wide and the same length as the back splint, are then secured on either side by buckled straps, so that the leg lies in a long 3-sided trough. The whole is supported and slung in a Sæter's Cradle. Twenty four hours later the limb must be examined but without undoing the bandages; if everything is satisfactory and there is no undue swelling of the foot, a little gentle passive movement of the toes may be tried. One by one the toes are gently moved so that the tendons attached to the phalanges are slightly pulled upon. This may be continued for 10 minutes. The limb is then carefully flung as before.

Upon the second day the bandage may be so far removed as to uncover the foot, to which massage in an upward direction may be applied together with passive movement of the toes as on the previous day.

Upon the third day the leg should be completely uncovered, resting passive meanwhile upon the back splint.

The whole foot, ankle and leg should be gently massaged, the toes gently moved, and, if no pain is experienced, the ankle joint also may be carefully moved slightly. If there is no swelling or vesication, preparations should now be made for securing the limb in some form of case. The essentials of a good case are:—

- (1) It should be perfectly rigid.
- (2) It should fit the limb and be produced by a different material.
- (3) It should be light.
- (4) It should be removable.

at material from which to make such a case is rough un-
filled-board, roughly shaped to the limb, moistened in water, and
moulded to the leg. This is secured by 3 or 4 layers of starch
adheses. This dries in 24 hours into a firm, rigid but light case. It
can be cut right down the middle line anteriorly and forced apart so
that the leg can be removed. Upon replacement it is secured in place
by adhesive strapping.

When this apparatus is quite dry, the patient may be allowed to
get up and to move about upon crutches, the encased limb being slung
up from the ground.

Five days after its application the leg should be carefully removed
from its case and thoroughly but carefully massaged for 15 minutes,
after which gentle passive movements of the toes, ankle and knee are
instituted.

This is done daily for a fortnight. During the fourth week the mas-
sage is continued, whilst active and passive movements of the joints are
allowed. At the end of the fourth week, if the patient can be trusted to
follow instructions implicitly, the case may be dispensed with alto-
gether. The patient must, however, be warned from attempting to put
any weight upon the limb.

The limb must rest supine upon a couch, except at stated times
when massage and active and passive movements are allowed.

At the end of six weeks the patient may begin careful attempts at
standing and walking.

With patients who are impatient or intolerant of control it is wiser
to retain the splint for a full six weeks; otherwise they may, by hasty
attempts at walking, refracture the limb.

This plan of carefully graduated movements of a fractured limb has
the result of:—

- (1) Hastening the absorption of exudates.
- (2) Preventing adhesions between joint surfaces; between
tendons, muscle, periosteum, blood vessels or nerves.
- (3) Preventing muscle wasting either from disuse or splint pres-
sure.
- (5) Hastening the union of the broken bone.

The writer has had a case of Pott's fracture after this
method. The patient was a young farmer, and both to him and
his relatives some excellent results were obtained. In his own discretion was allowed as

regards massage and movement. Within six weeks of the accident the
patient was walking; at the end of eight weeks he was playing cricket.
Throughout practically the whole period of his convalescence he was
able to get about on crutches and not only superintend his farm work,
but also attend the market held weekly in a town eight miles away.
The writer only saw him six times—a consideration of no small value
when one is busy and the patient living a long way off.

Before leaving the subject of the modern treatment of fractures, a
word should be said about the plan of immediate operation in cases
of simple fracture. This plan has been much advocated by Mr. Arbuthnot
Lane of Guy's Hospital, and consists of exposing the fracture by an open
incision and securing the broken end in accurate apposition by means
of wire, screws or plates. In Mr. Lane's exceptionally skilled hands
this plan has produced the most perfect results, but it is very doubtful
whether the advocacy of its general adoption is wise. In London and
hospital work, where asepsis has reached the highest pitch of excel-
lence, there is little risk of misadventure, but in general work, especially
in the country or the colonies, one has to bear in mind the following
facts:—

- (1) The necessity of an anæsthetic.
- (2) The necessity of skilled assistance and nurses.
- (3) The need of perfect asepsis.
- (4) The risk of infection of the wound and the initiation of an
acute osteomyelitis.
- (5) The satisfactory results which can be obtained by the
more conservative methods.

Personally the writer gives his unhesitating support to the treat-
ment of simple fractures outlined in this paper, rather than expose the
patient to the risk of an open wound and its attendant dangers.

* INFANTILE PARALYSIS.

BY

SURGEON MAJOR R. E. WRAFTER, B. M. S. (RETD.), DEHRA DUN.

In this affection, belonging as its name indicates to the earlier years
of life, there are observed much the same changes as progressive mus-
cular atrophy. It is a disease, however, not only of childhood, but one
which is ordinarily acute, the parast motor-troph. of the muscles deve-
loping at first, frequently in the coroduced by a diffi. simple, or, at
and the atrophy or want of nutritie grey matter of the co. myelitis of moderate intensity.

* Specially contributed by the author. The writer has observed several cases of this disease in the
circumscribed areas; he adopts

times, associated with fibrous or fatty degeneration, quickly manifesting itself, having been observed as early as the fifteenth day, though commonly not for a month or two. The seat of the lesion has been satisfactorily determined, and has been shown by recent observers to be in the anterior cornuæ of the spinal cord, there being a primary poliomyelitis with destruction of the cells. Here, as in progressive muscular atrophy, deformity, especially located in the lower extremities, is produced, and this deformity usually brings the case sooner or later under the care of the Physician or of the Surgeon. In very many cases, however, by early recognition of the disease and the institution of proper treatment, the muscular wasting may be arrested, and partial, if not complete, restoration of the functional integrity secured. Infantile paralysis, though happily rare, is generally rather sudden in its accession. For practical purposes, cases of paralysis occurring in children may be grouped under three principal heads:—(1) From organic disease of the central nervous system, the brain or spinal cord. (2) From blood-poisoning. (3) From eccentric irritation, or reflex paralysis. Under the first head may be included most, if not all, cases of congenital paralysis, as those which generally arise from some malformation, and it need hardly be said that such cases do not admit of treatment with any hope of success. So also caries of the spinal column may lead to disease of the cord, and to consequent paralysis. Here again little can be done by way of treatment. Lastly, there is the paralysis due to inflammation of the brain or spinal cord, to cerebral tumours, and tubercle. The second variety refers to cases of paralysis which not infrequently come on in the course of the eruptive or continued fevers, scarlet fever, measles, and typhoid fever, or in the course of diphtheria. These cases, as a general rule, recover, and the treatment of that upon which the paralysis depends is the best treatment for the paralysis itself. The third variety refers to cases of eccentric or reflex paralysis which are certainly by far the most common in children. They occur most frequently during early dentition, either in connection with it, or from irritation due to derangement of the digestive organs, constipation, the presence of worms, etc. Sometimes it arises from cold, there being no organic lesion. Possibly the term "reflex," as applied to some of these cases, is scarcely correct, but it will serve its purpose if we will understand by it that no organic lesion is discoverable. To one or other of these varieties most cases of infantile paralysis in children may be referred, but there are cases which, from their history, suggest some other cause, though their treatment is entirely empirical. The matter of speculation. In them the loss of reflex action does not afterwards increase; it is

very often complete, and is generally unattended by any cerebral disturbance; it may be limited to one limb or set of muscles, or may involve both upper or lower limbs; it generally leads to wasting of the palsied muscles, sometimes to deformity. The attack itself may begin in sleep, or may be ushered in by convulsions; sometimes there is a feverish attack at first, which, however, is only transient, and no other warning may be given. There is no pain, or any tenderness in the spinal column, except in a few rare cases where the paralyzed limb is also painful both to the touch and in movement. As a rule, sensation remains intact, or is somewhat dull, but there is no muscular rigidity or any reflex excitability. The sphincters are not affected. If the paralysis continues, the affected muscles begin to waste, and their fibres to undergo a kind of fatty degeneration; "the transverse striæ disappear first, then the longitudinal markings; instead of the transverse striæ amorphous granules appear, which are soon replaced by distinct fat globules." Such a history as this, and such symptoms, naturally suggest the idea of spinal mischief; nor is this at all improbable; but as the cases generally recover, there is no possibility of proof, and for practical purposes it is perhaps of little moment. On the other hand, the fact that the sphincters are not paralyzed, that the paralysis does not increase, but rather decreases, that sensation is not destroyed, or the temperature increased—all this is against the existence of spinal inflammation. The evils which result from persistence of the paralysis are very great; for though it may never be followed by demise, it produces such an alteration in the nutritive functions of the affected muscles, as often leads to incurable deformity. Not only do the affected parts cease to grow in the same proportion as the healthy, but the limbs waste, for they are imperfectly nourished; and although they do not seem to want sensation, yet their power of motion is lost or diminished; consequently, if the child begins to walk the leg drags; and as it fails to support the body, the child falls. Supposing one arm to be paralyzed, it will soon be noticed that it is not used equally with its fellow, and that when raised it falls by its own weight. Alluding briefly to the Pathology of the disease above, it has been further shown that, according to French authorities, Infantile Paralysis is due to atrophy of the grey anterior columns of the spinal cord, especially in the cervical and lumbar enlargements, in which the largest motor-trophic ganglion-cells are found. Dr. Althaus states that it is produced by a diffuse, acute inflammation of the anterior cornuæ of the grey matter of the cord. He characterizes it as an extremely acute myelitis of moderate intensity, which is either diffuse or occurs in circumscribed areas; he adopts

Kussmaul's term for the disease, and designates it "anterior poliomyelitis." The right anterior cornuæ of the lumbar enlargement is specially liable to the inflammation; hence the frequency of paralysis of the right lower extremity. Dr. Althaus defines the affection as "exclusively motor paralysis followed by muscular atrophy, to which is frequently added contraction and deformity." The diagnosis of the different forms of paralysis in childhood is not usually a matter of much difficulty if careful attention is given to the history of the case. In cases of cerebral paralysis, excepting those which are congenital, there is generally some previous history of brain disease, but in addition to this there are also differences in the paralytic and other symptoms. If the case be congenital we may be tolerably certain that it is due to cerebral causes. If it is not congenital, but if there have been rather severe and persistent convulsions, if the muscles be at all rigid, if they are easily excited by reflex irritation, if their temperature be rather increased than otherwise, if the paralyzed limb does not waste, and if the face be at all affected (provided it is not merely facial palsy), then the case is probably one of cerebral origin. And this probability will be heightened if the paralysis be hemiplegic, while, on the other hand, the converse of all this will be strongly in favour of a spinal origin. As regards prognosis, this has reference much more to the probable duration of the affection than to the question of existence or demise; and, in forming an opinion, the time which has already transpired since the attack first began must be a main element of consideration, for it may be laid down as a general rule that the longer the disease has existed beyond six months the longer it is likely to last; in other words, the more difficult will it be to cure, and the more slowly will remedies act upon it. The two other points which should mainly guide our opinion are, the degree of wasting in the paralyzed limbs or set of muscles affected, and the effect produced on them by galvanism; if this be *nil* the case is an unfavourable one, and *vice versa*.

The Treatment must vary according to the cause. If any source of irritation can be discovered, this should be removed if possible; and as worms are not infrequently the cause of reflex paralysis, a dose of Santonine combined with Calomel and sugar may be given,—Santonine is considered a specific for round worms—or an enema of common salt and warm water Infusion of Quassia may be employed. We may also employ friction, and sometimes counter-irritation, to the spine. After the age of four years, the eighth of a grain of the Extract of Nux Vomica may be prescribed thrice daily, increasing the dose slowly till it reaches one third of a grain. In the acute stage of the disease, Dr. Althaus

recommends the subcutaneous injection of Ergotine. He employs a solution of Bonjean's Ergotine in distilled water, and injects, generally the lower extremities, one-fourth of a grain for a child from one to two years old; one-third of a grain for one from three to five years of age; half a grain for children from five to ten years old; and a grain for patients above that age. The injections are to be repeated, according to the symptoms, once or twice a day. The temperature and the state of the pupils are the special guides. If the temperature registers 103° or 104° F. and the pupil be dilated, the dose may be repeated and increased. Its repetition should, however, be delayed under other circumstances, for a long-continued administration of Ergotine is not advisable. In all cases the general health is to be attended to, and the functions kept as nearly normal as possible; purgatives will often be needed, together with tonics, and nervine stimulants. The little patient is to be taught to walk while being supported in a go-cart, or in a baby-jumper; or, if old enough, by means of a pair of crutches. It is of the greatest importance that the muscles of the affected limb should be daily exercised, if possible, by gymnastics, shampooing, simple friction, etc. Galvanism is a remedy which, at the proper time, the medical attendant is pretty sure to employ. It is one of the most valuable agents we possess in the treatment of infantile paralysis, but it requires to be used with caution, and this, in direct proportion to the amount of reflex excitability present in the paralyzed muscles. If no contraction follows its use, if the muscles are a good deal wasted and the case be one of very long standing, it is probably hopeless, and neither this nor any other remedy will avail to rouse the muscular sensibility. In cases where there is reason to suppose that inflammation has existed, the Iodide of Potassium should be used in doses according to the age of the child. Afterwards the Iodide of Iron, small doses of Phosphorus, Cod-Liver Oil, and the Compound Syrup of the Phosphates (Parrish's Chemical Food) will be found beneficial. These have proved in our hands of signal service in those cases where the general health has been much affected and the muscles a good deal atrophied. Good diet, fresh air, and tepid bathing will also increase the chance of cure.

*TREATMENT OF BRONCHITIS.

BY

DR. JOGENDER LALL CHUNDRA, L.M.S.,

Late Prof. of Anatomy, College of Physicians and Surgeons, Calcutta.

Bronchitis means inflammation of the bronchial mucous membrane.

* Specially contributed to *The Antiseptic*.

Before describing the treatment of this disease, I think it is better to say a few lines about the anatomy of bronchus.

In the larger bronchi the cartilage forms an incomplete circle just as it does in trachea, but as the tubes divide in the interior of the lungs a complete ring of cartilage is formed. In the smaller bronchi the cartilage becomes broken up, so that instead of there being a complete ring there are several discrete portions which are firmly held together by fibrous tissue, and in the smallest divisions there is no cartilage at all.

Muscular and elastic tissues are present throughout the whole system of tubes.

For practical purposes it may be said that the larger tubes, as regards the lumen, are non-dilatable, but they are subject to a narrowing either by muscular contraction or by swelling of the lining membrane.

There are two kinds of bronchitis:—

1. ACUTE.
2. CHRONIC.

Acute bronchitis means acute catarrhal inflammation of the bronchial mucous membrane.

It is bilateral.

Repeated attacks of bronchitis lead to chronic bronchitis.

The direct cause of bronchitis, in the majority of cases, is an infection by micro-organisms; it is a common sequence of cold.

Physicians should bear in mind three points in the treatment of bronchitis:—

1. To keep up the patient's strength.
2. To relieve the bronchial spasm as much as possible.
3. To loosen the catarrh.

There are two kinds of treatment:—

- i. PROPHYLACTIC.
- ii. MEDICINAL.

i. PROPHYLAXIS:—

1. Children should be in open air as much as possible during the day and enjoy as much free ventilation from the outer air at night as may be compatible with prudence.

2. Sudden change of temperature should be carefully guarded against.

3. Hygienic treatment of the skin is very important.

"An excessive amount of clothing by night and day with wraps round the neck and wool next the skin, excludes too completely the oscillations of the outer temperature which should act as a stimuli to the cutaneous surface. Moreover, the constant moist heat which is

thus maintained tends to make the skin delicate and to depress its power of reaction."—W. EWART.—(ALLBUTT'S *System of Medicine*, Vol. V.)

ii. *Medicinal Treatment*:—

1. A dose of Calomel followed by a Saline will do good in every way.

2. All drinks should be given hot.

3. Citrated milk is allowed.

Sodi Citrate gr. $1\frac{1}{2}$ should be added to an ounce of milk.

4. As a rule alcohol is unnecessary.

Treatment of Acute Bronchitis:—

INTERNALLY:—

R.—Liq. Ammon. Citratis, ℥i.
Spt. Etheris Nitrosi. m. xx.
Vin. Ipecac, m. iv.
Pot. Citras, gr. x.
Syr. Althæ, ℥ss.
Aq. Anisi, ad ℥i.

Mft. for a dose: Sig: one every 3 hours.

LOCALLY:—

R.—Lint. Ammonia, ℥iii.
" Terebinth Co. ℥iii.
" Saponis Co. ℥ii.

Mft. to be rubbed on chest twice a day.

ii. Hot foot-bath is very useful as an adjuvant to vascular stimulant in relieving congestion and preventing inflammation of bronchitis.

INHALATION:—A few drops of Spt. Chloroform in a steam inhaler is used to allay irritable cough.

Treatment of Chronic Bronchitis:—

1. STIMULANT EXPECTORANT:—

It stimulates the heart, increases blood pressure, and diminishes secretion by stimulating relaxed mucous membrane. The following are the best stimulant expectorants, *e.g.*, Ammon Carb., all Aromatics, Senaga, Squill and Strychnine.

R.—Ammon Carb, gr. iii.
Tinc: Carminative, m. x.
Syr: Scillæ ℥ss.
Inf: Senaga ad ℥i

Mft. for a dose: Sig. one every hour with a tabloid of Strychnine Sulph. gr. $\frac{1}{4}$.

2. SEDATIVE EXPECTORANT:—

It depresses the heart, lessens blood pressure, and increases secretion.

When cough is dry and distressing, prescribe:—

(a) Sedative expectorants, *e.g.*, Bromide, Codein, Morphin, Heroin, Dionin, Tinc. Camphor Co. It has a soothing influence over mucous membrane.

(b) Promote secretion by Ipecac, Ammon. Chloride, Apomorphin, Antimony and *Saline Expectorant*, *e.g.*, Pot. Iodide, Alkalies in Rheumatic or Gouty cases.

R.—Ext. Ipecac. liq. m. i.
Ammon Chloride, gr. vii.
Pot. Iodide, gr. iv.
Pot. Bicarb, gr. x.
Ext. Glycyrrhizae liq. m. xx.
Aq. anisi ad ʒ i.

Mft. for a doses. Sig. one thrice a day.

3. When sputum is abundant prescribe *Antiseptic Expectorant*, (*e.g.*) Creasote, Guaiacol, Petroleum (in the shape of Angier's Petroleum Emulsion and Turpentine) and Tolu, Camphor, Senega.

R.—Creasotal, m. v.
Glycerine, m. x.
Syr. Tolu, m. xx.
Syr. Cascara, m. xxx.
Inf. Senega ad ʒ i.

Mft. for a dose : Sig one thrice a day.

N. B.—There are two excellent preparations of Creasote.

(i) Creasoted Cod Liver Oil with Hypo-phosphate of Calcium and Sodium. (P. D. & Co.)

(ii) Cream of Malt with Cod Liver Oil, Hypo-phosphites and Creasote.

INHALATION:—

Vapours of Creasote, Terebin, Pinol and Eucalyptus.

LOCALLY:—

R.—Vaseline Iodine 10 per cent, ʒiv.
Camphor, gr. xv.
Oil Cajuput, ʒii.

Mft. to be rubbed over chest twice a day.

N. B.—There are lots of patent cough medicines which, so to speak flood the market. One may often learn much from quacks, though such men have neither honour nor principle enough to impart any of their knowledge for the good of humanity as a rule.

All knowledge in medicine should be the property of the profession, however obtained by any physician, if he think it an honour to be called a physician, and the man who strives to make a secret of any achievement in medicine is playing a traitor to himself, the profession and to humanity. However the following are worth trial, as their compositions are given and their combinations are very attractive.

1. Pino-dyne (*Pinus Canadensis*) Heroin, Codein, Terpin, Hydrate and Senega.—(*Oppenheimer & Sons.*)

Dose:—A teaspoonful thrice a day.

2. Anodyne Pine Expectorant (P. D. & Co.) It contains among other things, Pinus Strobus, Morphine, Acetas and Chloroform. It is particularly valuable for the alleviation of a dry spasmodic cough with little or no expectoration.

3. Syr. Cocillana Co. (P. D. & Co.) It contains among other things, Heroin Hydrochloride, Cocillana, Squill and Menthol.

Dr. Wilcox in the *Therapeutic Gazette*, June 1893, recommends Cocillana in preference to Ipecac, Apo-Morphine in Acute and Chronic Bronchitis. It liquefies the secretion and relieves acute exacerbation. It is contra-indicated in Senile Bronchitis.

4. Pertussin (Ext. Thyne Saccharat) is used in Asthma, Whooping Cough, Tracheal and Bronchial Catarrh.

The writer recommends the following in *Bronchi Eclasis with cough and bronchial irritations*:—

R.—Elix: Heroin et Terpin Hydrate (P. D. & Co.) ʒiss.
Syr: Prunum Virginianu ʒi
Syr: Picis, m. xx.
Syr: Cascara, m. xxx.
Aq. Lautocerasi, ʒi.
Aq. Anisi, ad ʒi.

Mft. for a dose : Sig one thrice a day.

5. Antispasmodic Expectorant:—

E.g., Lobilia, Iodide, &c.

Vide my article on Asthma.

5. When dyspnoea and other cardiac symptoms present, use cardiotonic and stimulant.

6. If there be Gouty Diathesis mineral water 3 ozs. with 3 ozs. of hot water to be taken by sips early in the morning.

By far the most satisfactory method of treating chronic bronchitis is change of air.

Our Contemporaries.

MEDICINE.

The Physiology of the Appetite.

With Reference to the Arrangement of Meals and Medicines.

BY

E. I. SPRIGGS, M.D. LOND., F.R.C.P. LOND.;

Senior Assistant-Physician to St. George's Hospital; Physician to the Victoria Hospital for Children; Examiner in Materia Medica, Conjoint Board.

GENTLEMEN,—The possession of an appetite for food is known by all to be a sign of health. The lack of appetite is commonly the first symptom of illness to arouse the attention of a man or his friends. We do not know exactly how the need of food and water gives rise to the desire of eating and drinking, though it is probable that the sensations of hunger and thirst arise chiefly from the alimentary tract; for hunger or thirst may be satisfied at once by taking food or water into the stomach, before a sufficient time to allow of absorption or assimilation has passed. Thirst is associated with dryness of the mouth or throat, the want of secretion depending upon the concentration of the blood, to which the severity of the thirst is doubtless proportional. Hunger is associated with an empty stomach, but that is not its only cause, since it may increase in intensity after the stomach, and probably the small intestine too, is free from food.

PHYSIOLOGICAL APPETITE.

In a healthy man an appetite comes naturally, a few hours after a meal, upon the thought of food: if he be so occupied that no such thought enters his mind, he may be free from hunger for a much longer time. Later, however, the idea of eating will present itself, arising either from visceral sensations or from perceptions, such as the sight or smell of food, or of its preparation. In any case as soon as the attention of a fasting man is directed to the idea of food, the appetite is aroused. If there is, at the same time, a likelihood of his obtaining food, the appetite is intensified and reinforced at once by a secretion of saliva and of gastric juice; with the result that the alimentary system is now prepared to receive and digest the food. Neither the sensations nor the secretions are excited if food has been taken recently, or if ill-health has interfered with the normal process I have described.

It is necessary to obtain as full a knowledge as we can of the conditions under which the digestive juices are poured forth, in order that instructions as to hygiene, diet, and medicine may be given to those

who seek advice. We have also to instruct healthy folk as to the arrangement and composition of their meals and although it is not well for them to pay too much attention to the details of their daily food, it cannot be doubted that a neglect of all regulations is likely to predispose to digestive disorders. It is true that the human stomach would not have survived to the present day in the form in which we find it, were it not capable of great adaptation. It is possible, however, and even likely, that the evolution of the digestive organs is not now proceeding along the best lines. Civilised life, as we know it, does not tend to produce a hardy digestion. It is, therefore our duty to inform the healthy, as well as the sick, of the circumstances which have been observed to govern a natural digestion and nutrition.

EXPERIMENTS IN DIGESTION.

I shall refer to day, not so much to the teachings of experience as to the findings of experimental medicine, for by experiment alone can we determine which part of the tradition we have received is true and which false. When, as the result of a series of experiments, some fact is laid down with which we feel we were perfectly familiar before, there is sometimes a feeling of disappointment, such as I expect you will have to-day, gentlemen, for I shall lay no sensational results before you. We are apt to forget that the conclusion reached was previously but one among many other competing statements or hypotheses, whereas now it may form a firm base for further observations.

The experimental study of digestion received its first great stimulus in modern times from the observations of BEAUMONT upon the gastric fistula of ALEXIS ST. MARTIN. BEAUMONT'S results have been confirmed and amplified recently by the researches carried out by PAWLOW and his pupils upon dogs. Still more recently, many of PAWLOW'S conclusions have been established in man.

PAWLOW'S dogs were provided by operation with an oesophageal fistula, the gullet being divided in the neck, and both its cut ends caused to heal separately in the wound, so that food swallowed did not reach the stomach, but passed out by the fistula. A gastric fistula was also made. Further, a part of the stomach, following HEIDENHEIN, was separated from the rest of the organ by an ingenious operation so that an additional "small stomach" or bag of gastric mucous membrane was formed having an external opening through the skin, and retaining all its nervous and vascular connections. By this means the secretion of gastric juice during the act of digestion in the large stomach could be watched in the small stomach free from the presence of swallowed food.

PAWLOW observed that the sight of food was sufficient to cause a flow of juice in a hungry dog, and that feeding the animal with meat, which, of course, did not reach the stomach but passed out by the œsophageal fistula, known as "sham feeding," was accompanied by a copious flow of gastric juice. As much as 700 cc., or a pint and a quarter, was obtained from a dog which ate meat for five to six hours. It is obvious, from this experiment, that the stomach can supply very large demands in health.

I do not know of any observations upon human beings directly comparable to those upon dogs with the "small stomach." There is, however, a small series of three cases of œsophageal stricture, treated by gastrotomy, in which the secretion of gastric juice has been carefully observed and reported. These reports are of great value to us in that as they confirm, on the whole, PAWLOW'S results, they show us that we are upon safe ground in applying them to mankind.

SOME CLINICAL OBSERVATIONS.

A. F. HORNBERG (1903) observed a child of five years suffering from an œsophageal stenosis due to swallowing caustic alkali, upon whom gastrotomy had been performed. The boy produced a copious secretion in the stomach if he chewed good tasting food, after a latent period of six to seven minutes. The secretion lasted forty minutes, a duration similar to that of one hour observed in dogs sham fed with meat for a short time. Chewing food which he disliked, or irritating substances, was not accompanied by secretion. The sight of food did not provoke a secretion in this boy. It is possible that when shown it he knew he was not going to have it, for even in dogs it has been found that if they believe food is exhibited for merely experimental purposes no juice flows.

H. BOGEN (1907) observed a similar case in a boy of three and a half years. The sight or suggestion of food was followed by a copious flow of juice after a latent period of five minutes in the case of meat and nine with milk. Any perception which he learned to associate with the idea of food, such as that of the sound of a trumpet at meal times, would arouse the secretion.

H. KATZNELSON (1907) reported the case of a girl who at the age of fifteen acquired an œsophageal stricture through caustic alkali, was provided with a gastric fistula, and till the age of twenty-three lived entirely upon food placed in the stomach through this opening. Œsophagotomy was then done at the level of the lower part of the thyroid cartilage, the upper end of the gullet being brought out on the left side of the neck and fitted, after healing, with a tube which passed down the front of the chest to the stomach opening. At the time of KATZNELSON'S paper

this tube had been worn for eight years. The patient had put on weight and was normal in appearance, the apparatus, being concealed by the clothes. The process of secretion could be observed when she lay on the left side, for if the tube was removed the gastric juice secreted ran out of the fistula. In this patient also the act of chewing and swallowing food, which passed out of the œsophageal opening, was accompanied by a copious secretion. A mixed meal of meat and vegetables called forth more secretory activity than milk. The latent period was about five minutes, and the secretion, once started, went on a long time after the sham feeding had ceased, *e.g.* in one case an hour and twenty minutes.

PSYCHICAL INFLUENCES.

The gastric juice which is poured forth on the thought, sight, smell, or taste of food, independently of whether any food enters the stomach or not, is known as the appetite juice, and the nervous impulses which provoke its secretion are carried to the stomach by the vagus. The secretion of appetite juice is peculiarly subject to sensory and psychical influences, to which I must now refer, as this aspect of the matter is of importance to us in treating patients in whom a natural appetite is wanting.

Pain or discomfort inhibits the secretion of the juice for a long time. Indeed, the neglect of proper precautions to secure that the experimental animal was free from pain or distress led to the failure of early workers to prove the occurrence of digestive secretion or stimulation of the tenth nerve. Psychical influences of various kinds will affect the flow. I have mentioned that a dog which is led to believe, from its past experience, that food shown is not going to be given it to eat, does not produce a proper flow of appetite juice, whereas the lively expectation of a meal will do so before any food is taken into the mouth. Preoccupation of the mind and strong emotions will also inhibit the appetite juice. For instance, BICKEL and SASAKI, after sham feeding a dog for a short time, collected 67 cc. of gastric juice in twenty minutes. On another occasion the dog was first shown a cat, and put itself into a tremendous excitement, with the result that, under conditions otherwise similar, only 9 cc. of juice were produced.

The child observed by BOGEN, if the food which he had been led to expect was not brought, became exceedingly angry, with the effect that when his meal did appear the secretion of gastric juice was much diminished. Obvious lessons may be drawn from this experiment and applied to domestic life, but I hesitate, gentlemen, to take sides in the matter. You may have seen the cautious inscription on the obelisk near the battlefield of Naseby, stating that that great day furnishes a lesson to kings not to exceed their just prerogative, and to subjects not to rebel against their

sovereign. With similar produce, I may point out that the above experiment is a warning to wives so to order their households that dinner shall not be late, and to husbands to preserve a calm demeanour if unavoidable delays occur.

EMOTIONAL STATES AND DIGESTION.

Anger or discomfort will arrest, not only the secretion, but also the rhythmic movements of the stomach and intestines, as was observed by CANON in the cat by examination with the x -rays after a meal containing bismuth had been given.

The evidence before us, therefore, confirms and puts upon a scientific basis the experience of mankind that pain and discomfort, preoccupation of the mind, strong emotions, and bolting the food without proper mastication are prejudicial to easy digestion. Meals should be taken in comfort among pleasant surroundings, with good temper, and at leisure, if "good digestion" is to "wait on appetite, and health on both." The personal preparation for chief meals, such as washing, changing clothes, all form part of the anticipation and predispose to a good supply of appetite juice. The sound of the dinner-bell and the clink of plates supply the final stimulus to the secretory centres. To read at meals, to converse on subjects requiring concentrated thought, or on contentious and disagreeable subjects, is undesirable. It is clear, also, from the above quoted experiment with the dog and cat, that the preference which we all have to sit at meat among friends and as far as possible from our enemies, if we have any, or, shall I say, from those with whom we have little in common, is founded upon physiological laws. It is better for us; also for them.

The food entering the stomach is collected at the cardiac end. In the centre of this mass the digestion of starch goes on for half-an-hour, by means of the saliva with which the food is intimately mixed by mastication. The gastric juice meanwhile gradually permeates the mass from without, and as each portion becomes acid salivary action is arrested, and the digestion of protein begins. The products of protein digestion themselves set up a mechanism for the continued production of juice, a chemical and local stimulus, so that the flow of gastric juice can now be continued independently of nervous impulses coming through the vagus.

We see, therefore, that unless the appetite juice be first forthcoming to start the digestion of protein, the stimulus for the second or chemical flow will be wanting. This has been shown experimentally both in dogs and in man. In the former, if meat be placed in the stomach without the knowledge of the animal it may lie there undigested for hours, and

may even decompose without giving rise to a flow of gastric juice. In the latter, SCHULE recorded that, in a patient whose stomach was being washed out daily, if food was introduced through the tube without the knowledge of the patient, so that the thought of food which would arouse the appetite juice was wanting, then on withdrawing the stomach contents later it was found that but little digestion had taken place.

AIDS TO DIGESTION.

It follows that the loss of appetite bears a double penalty, first the loss of the appetite juice, and secondly, the loss of the chemical secretion of juice. The latter, however, can be aroused if the products of protein digestion, artificially prepared, are placed in the stomach. These are contained in soups made by stewing meat or bones. Soup is, therefore, as is well known, a help to digestion if the appetite is poor, and should be taken, as it is, near the beginning of a meal; it is neither necessary nor advisable to take a great deal of it.

The pancreatic secretion is, as shown by BAYLISS and STARLING, excited by a hormone or chemical messenger which is formed when the first acid chyme from the stomach reaches the duodenum, and is carried by the blood to the pancreas. At the same time and in the same way a flow of bile and intestinal juice is called forth. We have but little reliable knowledge of defects of these juices, apart from gross obstruction of ducts or severe inflammation of the glands producing them.

We may now look at the information we have as to the effect of different kinds of food upon secretion, and consider what further guidance is given us.

The amount of salivary, gastric and pancreatic juice poured forth increases with the amount of food, but it is not the same at different times, especially as regards the appetite juice, which, as we have seen, varies with so many circumstances. The supply of digestive juices in health is plentiful and difficult to exhaust.

Meat, alone or mixed with bread, calls forth the greatest flow of gastric juice, and the secretion lasts longer than is the case after a meal of starchy foods. A meat meal remains in the stomach much longer than one of carbohydrate or fat. In the dog the secretion of gastric juice after a meal of meat lasts four hours, and that of pancreatic juice five hours. The gastric flow reaches its maximum in one hour or a little over.

FOODS AND DIGESTIBILITY.

It is obvious that the digestion of food, involving so much secretory, motor, and absorptive activity, causes a good deal of energy to be used

up. Accordingly it is found that there is a considerable increase of oxydation, as measured by the respiratory exchange, after a meal. Further, the increased oxydation is 30 per cent. greater after a meal of meat than after one of carbohydrate and fat, and lasts four hours. From the two sets of data, namely, the time of continued secretion and the time of increased oxydation, we see that four or five hours elapse before the bodily activities aroused by a meal of protein are at rest again. We may, therefore, conclude that in health a meal of meat should not be followed by another meal for at least four to five hours. If it be necessary to give food after a shorter interval, it should be of a non-protein character. Further, since the maximum secretion of juice after meat is not reached for an hour, it is reasonable to recommend that, if possible, an hour's rest, or at least freedom from active or anxious employment, should follow the chief meal of the day.

Egg-white leaves the stomach with little delay and is, therefore, a suitable protein to use when meat cannot be allowed.

Bread calls forth a good flow of gastric juice, but is passed out of the stomach fairly quickly, as are carbohydrates generally. Hence small meals taken between larger ones should consist chiefly of carbohydrate. Biscuits, bread, butter, and cake are used for this purpose. Whenever the digestion is ailing, or when meals are being taken near together, foods containing chiefly carbohydrate should be as dry as possible, such as dry or stale bread, toast, and biscuits, which require to be well masticated and are, therefore, thoroughly mixed with the saliva before they are swallowed, and afterwards with the other digestive juices. Dry toast buttered is more easily digested than hot buttered toast, which is soaked through with fat.

Fats inhibit the gastric juice and, though they do not stay in the stomach so long as proteins, are only passed gradually into the duodenum. Fat should, therefore, not be given in large quantities, and not in small intercurrent meals, but in the larger meals. The comparatively small amount of fat in one or two pieces of bread and butter probably does not have much influence; indeed, butyric acid has an opposite effect, it is a stimulant of the gastric juice. Perhaps this is a reason why butter is borne so much better than other fats.

Milk contains all the three foodstuffs, but it is digested with less secretory activity than any other food, and is, therefore, most suitable for the uses to which it is put in disease. The secretion of gastric juice is not great, firstly because there is but little appetite juice, and secondly because the fat in the milk has its inhibitory effect. Neither is much

pancreatic juice called forth. Cream hinders gastric secretion still more strongly. Lactic acid, however, exerts a favourable influence, though not so favourable as that of butyric acid.

Exclusive diets should be avoided. A true exclusive diet consisting of only one of the three foodstuffs cannot be endured by the body for long. A mixture of food is required to sustain the tissues and functions in health. The study of the appetite shows us that the appetite and the juice it calls forth are more easily excited by a pleasing variety of food, and a diet of this nature is, therefore, indicated. Prolonged meals consisting of a large number of dishes, however, act in the opposite direction and if repeated often are harmful to the digestion. Two or three dishes, well cooked, should be sufficient for all.

DIGESTIVE STIMULANTS.

If the appetite is jaded, the eating of highly-tasting foods, as hors-d'œuvres, will stimulate the appetite juice whilst soup as we have seen will call forth the second or chemical flow of juice. In perfect health, such preliminaries to a meal should not be necessary, unless indeed, as is doubtless sometimes the case, it is desired that the appetite be aroused to an unusual degree and the moderate needs of nutrition subordinated to the pleasures of the palate. Savouries, again, taken towards the end of a meal, are not necessary for digestion, though pleasant in themselves.

We have seen that the products of the digestion of protein are the most efficient arousers of the second flow of juice, also that protein and fat take longer to be discharged from the stomach than carbohydrate. It follows that in a mixed meal the protein and fat should be taken early in the meal, the carbohydrate later.

I have mentioned above that in a thirsty person the secretions generally are suspended. PAWLOW showed that a good supply of fluid was necessary for the production of digestive juices. An observation of BICKEL'S illustrates this. A dog which had taken no food or water for sixteen hours produced very little juice on sham feeding. Three hundred cc. of water were then put into the stomach. After ten minutes 250 cc. of this had been passed on or absorbed. The remaining 50 cc. were removed and the animal again allowed to eat meat. A plentiful secretion followed lasting for one hour.

MEAL TIMES.

We are often asked at what time to take fluid, before, during, or after a meal? The answer has not, in the past, been easy to give because of the fear of diluting the digestive juices, which may be none too plentiful or active. Experiment has shown that if water is given before a meal it is passed out of the stomach in from ten to

twenty-five minutes. It now appears that when a fair quantity of fluid is taken in the course of a meal consisting chiefly of solids it is separated from the solids, which lie in a mass in the cardiac end of the stomach, and is also quickly discharged from the duodenum, sometimes with barely an acid reaction. In the light of these observations, it does not appear to be a matter of consequence whether fluid in health is taken before, during or immediately after a meal. It is not likely to dilute the gastric contents, unless perhaps it is continually sipped between mouthfuls of food. Water passed into the duodenum is soon absorbed. It is not probable that any harm may result from diluting the intestinal contents by large draughts of water, for in experiments in which enormous quantities have been taken daily, the absorption of food, as ascertained by analyses of the fæces, has been found to be normal.

FLUIDS.

In most forms of dyspepsia, dilated stomach, obesity, and other conditions in which it is desirable that only small meals should be taken, it is of advantage to advise that no fluid be drunk until the meal is over. Drinking fluid during a meal restores the appetite to some extent and enables more food to be eaten. Water is an excitant of gastric juice.

Ice-cold water, on the contrary, is a powerful depressant of secretion, not only where it is directly applied experimentally in the stomach, but in the small stomach as well. It is known that the constant drinking of ice water is harmful to the digestion. Ices ought to be refused by those of poor digestion, and by the healthy should be taken into the mouth in small quantities only and allowed to be completely melted and warmed before swallowing.

Fluids are needed in greater quantity when much meat is eaten, whilst those taking a low protein diet need much less water and pass out less urine.

The time at which the chief meals of the day are taken differs among different races. We have seen reason above to lay down as a rule that a meal containing much protein should be followed by an interval of four or five hours. It is also clear that chief meals should be eaten under conditions of freedom from the thoughts of work. The solid breakfast, an ancient British institution, is taken after the night's rest when the body generally is of good tone; the knee-jerk, for instance, is brisker in the morning. I do not doubt that the digestive organs are also in better condition at this time, for foods which later in the day are ill-borne in dyspeptic subjects, such as bacon, can often be relished at breakfast

without penalty. The desire to rest idle after a good meal is also frequently absent at this hour, though present after later meals. In the morning the digestive system is more like that of a child, who seldom desires to rest after any meal. A meat breakfast can, therefore, be recommended, provided that time be allowed to eat it at leisure.

NUMBER OF MEALS.

Not more than two meat meals need be advised in the day to healthy people. The question of whether the second meal should be taken at midday or in the evening must be decided after consideration of the claims of work. If breakfast be early, say eight o'clock, and at midday an hour and a half or two hours to eat and rest be allowed, as in many parts of the Continent, there can be little doubt that to take the chief meal of the day between one and two is a good habit. The working day is divided into two parts, and the occupation can be carried well into the evening without undue fatigue. The necessities of modern life, however, render this plan difficult to the great mass of workers in towns who are far from their homes and can at the most give an hour, and often less, to their midday refreshment. Under these conditions, the midday meal should be light, containing but little meat, with carbohydrate and fruit, and no alcohol. The chief meal will then be taken in the evening, when the mind will be, or should be, relieved of the anxieties of the day. But if the work has been strenuous, the man may be tired in the evening, and his digestion not in the best state to do its work. In such a case, great benefit is derived from half an hour's complete rest in an easy chair, or lying down, before the evening meal, a plan found of great value in sanatoria, where the nutrition of the patient is the chief aim.

Intercurrent meals, such as mid-morning lunch and afternoon tea, should be small and consist almost entirely of carbohydrate, so that the stomach may be empty before the meat meal. Protein foods, such as sandwiches of meat and potted meat, should be avoided.

TEA DRINKING.

Tea, if freshly made and poured off the leaves, has an aroma and taste which stimulate the appetite; the caffeine it contains has, when taken in moderation, an excellent effect upon the central nervous system, and restores the flagging muscles. The ingestion of warm fluid is also refreshing. We know, however, that strong tea is the cause of dyspepsia and directly inhibits the secretion of gastric juice. In Sasaki's experiments the effect of sham feeding in a dog operated upon by the Pawlow method was noted when no tea had been taken and when a strong infusion, made by putting ten parts of tea to 400 of boiling water,

had been placed in the stomach for fifteen minutes. In the latter case the flow of gastric juice was much smaller.

Late suppers are well known to disturb sleep if the digestion be not perfect. The secretion of pancreatic juice goes on during sleep when food is to be digested, and so do the movements of the small intestine. Sleep is, therefore, as is to be expected, no bar to digestion. We must reflect, however, that if the evening meal be taken early, say between seven and eight o'clock, the food will be digested before midnight and the digestive system will have a long rest before the morning meal—will have, in fact, its night's repose; whereas, if a supper be taken immediately before retiring, the stomach and intestines will not get to their rest until the early hours of the morning.

DYSPEPSIA AND ITS TREATMENT.

I may now mention a few points raised by the experimental work I have been discussing, which bear upon the treatment of sufferers from the various forms of dyspepsia associated with loss of appetite. PAWLOW observed that a dog which was the subject of a gastric catarrh produced an incessant slimy acid secretion. In such an animal a flow of appetite juice might be obtained, but the second chemical secretion was not. Two lines of treatment are suggested; one, to arrest the incessant flow of juice periodically so as to give the glands an opportunity to recover, and the other to arrange the food so that the appetite juice alone may be expected to digest it. To effect the latter, only small meals should be given, and these at more frequent intervals than in health. For the former we may make use of bicarbonate of soda.

Bicarbonate of soda, if given in suitable quantity, inhibits the secretion without, so far as we know, harming the glands, and, therefore, gives them rest. A solution of a strength of a quarter to a half percent, according to LONNQUIST, has no influence beyond the stimulating one of the water in which it is dissolved. A solution of one to one and a half per cent. definitely lessens the secretion. One and a half per cent is about seven grains to the ounce. We should, therefore, remembering that the medicine will be diluted by the stomach contents, give at least twenty grains in a dose. The effect reaches its maximum at the end of the first hour or the beginning of the second. It appears, therefore, that when bicarbonate of soda is being prescribed with this object it should be taken about an hour and a half after food. It will not then interfere with the digestion of the small meal preceding it, whilst its action will have passed off by the time the next meal is taken, supposing that a meal is being given every three hours. Magnesia has a much slighter effect.

In hyperæsthetic conditions of the stomach, soda gives great benefit by neutralising the acidity of the juice, and in these cases it may be necessary to administer it earlier after a meal, though in very many it will be found that a regular dose an hour and a half after food will soon bring relief. The mucus poured out in gastric catarrh reduces the efficiency of the gastric juice by combining with its acid. Any strong irritants, such as acids or concentrated salts, increase the secretion of mucous enormously, even, according to PAWLOW a hundredfold. In diseased states, therefore, any form of irritating or peppery food should be forbidden.

BITTERS AND PEPTIC FERMENTS.

Bitters, when given immediately before food, increase the secretion of the appetite juice. The effect is apparently due to the contrast between their taste and the taste of food. From observations on dogs it is possible that the same result would be obtained if the mouth were well washed out with the bitter solution. Such solutions given immediately before meals, should, in accordance with several time-honoured formulæ, be combined with acids, rather than alkalis. The recent observations of Heinsheimer on the influence of drugs upon secretion showed that bismuth subnitrate diminishes secretion to some extent, but has no effect on the digestion of protein or the acidity of the juice.

The preparations of the peptic and pancreatic ferments are now put forward as helps to digestion. When the gastric juice is deficient, however, the fault lies usually in the non-secretion of acid. LONNQUIST and ROSENBERG have recently investigated this question. The former found in the dog that neither 1 to 5 per cent. hydrochloric acid nor the natural juice called forth much secretion. Nevertheless, acid when added to juice deficient in ferment increased its activity. ROSENBERG administered fresh, active, human gastric juice to patients with achlorhydria, achylia, and chronic gastritis with subacidity, in doses of one to four drachms four times a day ten minutes before food. The stomach washings were analysed weekly. No definite alteration in the proteolytic power of the acidity of the gastric juice or in the motor power of the stomach was detected. In one of the patients much undigested connective tissue was found in the fæces and was still present after the treatment. Some patients, however, expressed the opinion that the appetite and subjective symptoms were improved. ROSENBERG concludes that no better results were obtained from giving gastric juice artificially than from prescribing a corresponding quantity of dilute hydrochloric acid. If this is true of fresh, active juice, we should not expect dried preparations to be of greater, or, indeed, of equal, value. There is but

little accurate experimental work to guide us in the administration of pancreatic ferments in cases of supposed intestinal dyspepsia, not due to gross lesions of the mucous membrane or of the glands.

Finally, gentlemen, I may remark that, whilst we may follow with confidence the paths marked out for us by careful research, we must not forget that in medicine no rules are absolute; and, although I have quoted them in a former lecture, I may recall to your minds Bacon's words: "Physicians are some of them so pleasing and conformable to the humour of the patient, as they press not the true cure of the disease; and some other are so regular in proceeding according to art for the disease, as they respect not sufficiently the condition of the patient. Take one of a middle temper; or if it may not be found in one man combine two of either sort; and forget not to call as well the best acquainted with your body, as the best reputed of for his faculty."—*The Hospital*.

Some Clinical Varieties of Paraplegia.

BY

GUTHRIE RANKIN, M.D., F.R.C.P.

We are all familiar with paraplegia as a symptom of disease, and we meet with it from time to time in the course of our every day practice. In the experience of ordinary work, however, paraplegic cases may be regarded as comparatively rare if we regard them statistically, and it happens, in many of them, that we are compelled to content ourselves with an incomplete diagnosis of "paraplegia," because sufficient opportunity is not given us to extend our observations over a long enough time to enable us to come to a conclusion as to which of the many possible causes it may be that is responsible for the loss of power in the lower limbs of the patient we have under our immediate consideration.

A paraplegic patient always comes to a doctor because of something abnormal about his legs; whatever other symptoms he may describe, or we may elicit by questioning, the main fact in his mind, and the one which he comes to lay before us, is that either he has lost power in his legs, or that sensation in them is impaired or diminished, or that they have become unaccountably stiff, or that they are the seat of pain, and unruly in their behaviour.

When the stray case turns up it is sometimes difficult to realize at the moment how many different morbid conditions may be responsible for paraplegia, and as I happen at the moment to have a series of patients under my care at the Dreadnought and Waterloo Hospitals, in which

paraplegia is a prominent symptom, I have thought it might be of interest to you to see these cases and to consider with me the various disorders of which they are examples.

And, in the first place, let me ask you to look at W. G., a seaman, aged 40, who was admitted to the Dreadnought Hospital in April of this year. He is an example of what may be regarded probably as the most common type of paraplegia. His complaint on admission was of increasing weakness in his legs, with some difficulty in micturition. In this initial complaint on the part of the patient we get a "lead" as to the likely cause of the loss of power in his lower limbs, and on closer enquiry we find that suddenly, while helping to load a ship with wood, he was seized with acute pain round his waist, which was followed within an hour by giddiness and loss of power in both legs. This loss of power increased so rapidly that next morning he was unable to walk and had to be carried ashore to the hospital. When he reached us at Greenwich he had complete paralysis of both legs and his bladder was distended almost to the umbilicus. Common sensation was impaired up to a point between the umbilicus and the pubis, and at that level there was a band surrounding the body of about 1½ in. in width, over which there was pronounced hyperæsthesia. Above this area sensation was normal. His knee-jerks were much exaggerated, and both ankle-clonus and Babinsky's toe sign were present. He developed complete incontinence both of urine and fæces, and was unable to move even a toe. He became also the victim of cystitis. An interesting feature in his case was the occurrence towards the end of July of a rigor, followed by temperature, sweatings, and all the other usual evidences of a septic condition, which no doubt arose from absorption from the bladder. Under treatment he has been gradually improving, and though his reflexes are still greatly exaggerated, he can now move his limbs, and he has regained a certain degree of control over both his bladder and bowel. This case is illustrative of the paraplegia which depends upon a myelitis at the lower end of the spinal cord. The prognosis is favourable as regards improvement up to a point, but his reflexes will never become normal, and a certain amount of spasticity will be a continuing disability, because it is due to secondary sclerotic changes of a permanent character in the lateral column of his cord below the site of lesion. His bladder, too, will readily give him trouble if he is not careful as to where and how he lives. The differential diagnosis hinges upon the sudden onset, the sensory disturbances, the weakness of bladder and rectum, the increased tendon reflexes in the legs, and the occurrence of cystitis. This man has escaped bed-sores—fortunately for him—but I need not remind you how frequently they supervene in cases of this description.

The next patient is also a sailor, and he is 28 years old. He was admitted to the hospital complaining of pains in his back and joints, of a few days' duration. The joints seemed tender when touched, but were not swollen, and there was no information gained from an examination of his back as to the cause of the pain, which he said he experienced in that region. In his general condition he was "below par," but there was no evidence of disease in any internal organ. Though he walked well and had no muscular wasting, no inco-ordination, and very little spasticity in his legs, it was discovered, on testing his reflexes, that his knee-jerks were exaggerated, that ankle-clonus and Babinsky's toe phenomenon were both positive, and that there was some enfeeblement of his leg muscles. There was a complete absence of sensory phenomena: no anaesthesia, no hyperæsthetic zone, no Rombergism, and no bladder or rectal troubles. He denied any specific infection, but this denial has always to be taken *cum grano*. Here is a case, then, in which nothing abnormal could be found, except the paraplegic evidence of a lateral sclerosis. The joint trouble was probably a passing incident; it rapidly disappeared after he had been a few days in bed. As there was no explanation to be found of this abnormal condition of his legs, we came to the tentative opinion that probably the case was one of primary lateral sclerosis. This is a disease about which we do not know very much, the diagnosis of which is usually reached *per viam exclusionem*, and one which is not of frequent occurrence. Nothing fresh transpired to throw doubt upon the first view of the case until a fortnight ago, when the patient was found to have developed a well-defined, though not as yet very pronounced, nystagmus. You can all see this for yourselves when I ask him to deviate his eyes first to one side, then to the other. This addition to his primary symptoms at once opens the door to the possibility of the need for a corrected diagnosis, and the suspicion that will at once enter into all your minds is that the case may turn out to be one of disseminated sclerosis in a very early stage. The man has no intention tremor, no staccato speech, no pallor of his discs; and indeed no other symptoms of this complex disorder, but it does not follow that we may not have caught him on the threshold of his disease, in which case we will have ample confirmation of our suspicions as time goes on. In relation to our present subject of paraplegia, however, we have in this man an example of that condition precisely similar, so far as the state of the legs is concerned, to the first patient we examined, but with none of the sensory phenomena which enabled us in that case to be sure that the man was suffering from myelitis. The evidence is quite conclusive that the patient now before us has disease in the lateral column of his cord,

but a final diagnosis as to the exact nature of that disease must be suspended until the picture assumes more definite outlines.

I next show you another man, aged 45, who is said to have been in good health up to June or July last. He then began to experience shooting pains in his legs and back, and within a very short time found that he had sensations of numbness on putting his feet to the ground, that he had some difficulty in retention of urine with occasional incontinence, and that he had frequent but temporary attacks of vertigo accompanied by double vision. He admitted alcoholism and also an ancient attack of syphilis. On examination his organs were found to be healthy. There is now no incontinence, and his urine is normal. He has no anaesthesia and no cranial nerve paralysis. There is no Argyl-Robertson pupil, but both discs are paler than they should be. When I ask him to stand you at once see how markedly he manifests Romberg's sign, indeed he has such inco-ordination that it is impossible for him to walk without support. Almost enough, you would say, to justify a diagnosis of locomotor ataxia! But let us examine his leg reflexes and you will observe that, just as in the two preceding patients, he has excessive knee jerks, a mild degree of ankle-clonus, and a slight but definite Babinsky reflex. The only disease we know of that produces this combination of nerve phenomena is Gower's ataxic paraplegia, and I think we must recognize in this patient an example of that interesting and somewhat rare condition. You will remember that in ataxic paraplegia the morbid lesion is a combined sclerosis of the posterior and lateral columns of the cord, with a resulting symptomatology which is a mixture of locomotor ataxia and primary lateral sclerosis.

The next case is one of such unusual interest that it would well repay us to take the whole time at our disposal for its investigation alone. I can only refer to it in its broadest outlines, but I am anxious you should see the patient alongside of the others, because here, too, we find one of the leading manifestations to be increased lower limb reflexes. He is 70 years old, and his trouble began more than twenty years ago with general weakness and a tendency to "fall about." Six years ago he lost the power of his legs completely, and subsequently he experienced difficulty with his vision. Then followed wasting of the muscles of his hands and arms, and to this has been added more recently, a curious explosive type of utterance and serious difficulty in deglutition. He is now entirely confined to bed, and, on looking at him, your attention will be arrested by the fact that he has a paralysis of his left external rectus muscle, that his lips are pendulous and that this expression of countenance is distinctly fatuous. When I ask him to protrude his tongue you

will observe that though it is not shrunken, the tremor of his lips is reproduced in it, and his speech, as you hear, is abnormal and almost unintelligible. If you examine his hands, you will be struck with the wasted state of all the muscles, with the claw-like appearance they present, and with the fine fibrillary tremor which corresponds to that we have noted in his lips and tongue. His vocal cords have been examined and are not paralyzed, and the optic discs cannot be properly seen on account of cataract in both lenses. When we come to his legs all the symptoms seen in the previous cases are recapitulated; excessive knee-jerks, ankle-clonus, and a very well-marked Babinsky toe reflex. He occasionally suffers from incontinence of urine, and at times he becomes mentally confused, but these may be regarded as terminal events in an illness that is drawing towards its close. Here, then, is a condition of disease obviously different from any of the preceding cases we have examined, and one which presents itself to us with its story full told and nearly completed. The combination of symptoms admits of but one diagnosis, namely, amyotrophic lateral sclerosis. The increased lower limb reflexes prove the existence of disease in the lateral column; the wasting of the upper arm muscles and the fibrillary tremors which you have seen are indicative of chronic changes in the anterior horn-cells, which are the pathological foundation of progressive muscular atrophy, and the difficulty in swallowing, peculiar articulation, pendulous lips and dribbling saliva speak only too eloquently of bulbar paralysis. It is not very often that the opportunity arises of seeing the whole story so graphically portrayed as in this poor man, and, apart from its special interest to-day because of the paraplegic symptoms, it is in itself an epitome of all we know about three important diseases: lateral sclerosis, progressive muscular atrophy, and bulbar paralysis, which we know under the name of amyotrophic lateral sclerosis.

The next case will not occupy more than a few moments. I have asked Mrs. L. to come to-day, because some of you may remember seeing her in this room a year or more ago. She was then kindly sent to us by Dr —, and at that time the impression we formed of her symptoms was that they were neurasthenic, and probably connected with her menopause. There are two points about her case which are of special interest, and only to those need I refer. In the first place she has, like all our other cases to-day, markedly exaggerated knee-jerks. When I tap her patellar tendon you will agree with me that the response is as active, if not more so, than in any of the previous patients. But, in contradistinction to them, she has no ankle-clonus, and, what is very important, no plantar reflex, either flexor or extensor. This reflex

contradiction of exaggerated knee-jerks with absent plantar response is always indicative of a functional condition, and, as I pointed out when she previously came before us, it formed one of the features of her case which, when combined with many other confirmatory symptoms, made us conclude that at that stage of her illness her condition was compatible with a diagnosis of neurasthenia. Lately, however, certain new elements have entered into her condition, and again we are warned of how careful we should be in arriving at a firm diagnosis in the early history of nervous cases. When she walks across the room I ask you to observe her statue-like attitude, her wooden expression, the deliberate way in which she turns, and the position of her right arm, which is bent at a right angle across her body, the hand being in a constant state of notable tremor. This tremor ceases when the arm is put in use—a striking contrast to the intention tremor of disseminated sclerosis, which becomes apparent only on effort—and when we ask her to walk backwards there is more than a suspicion that she is developing that curious gait which we describe as retropulsion. Altogether, I have little doubt that this patient is now in the early stage of paralysis agitans, and that the neurasthenic symptoms, many of which are still in evidence, were mere forerunners of the more serious organic affection.

Finally, I ask your attention for the few minutes that remain to us to these two children. They are both suffering from cerebral diplegia, and in them, as in the adults we have examined, they both present, as I show you, plus knee-jerks, ankle-clonus, and extensor toe-reflexes. The boy, who is 5 years of age, was born naturally and was perfectly well until June last, when he was attacked with measles which seemed to run its ordinary course, but during his convalescence his parents noticed that he was unable to use his arms and legs. The arms gradually regained their power, but he has never been able to walk or stand since his illness, and he is developing a rapidly increasing spasticity. He has no sensory or bladder symptoms, and has been quite well, apart from his legs, until about a week ago, when he complained of headache and had one attack of vomiting. It was then discovered that his discs were very red and suspicious of approaching optic neuritis. Neither vomiting nor headache has recurred and the temperature is normal, but there is serious ground for apprehension that he may have trouble in store. Apart from the interest the case possesses as another instance of paraplegia, it serves as a useful reminder that measles, simple though it usually is, may sometimes be attended by other serious complications than those which we look for in the lungs or bronchial tubes. It is obvious that here we have to deal with trouble in the cortex, and the facts I have related to you make us

fear that the degenerative process which has been set up in the brain is not an altogether quiescent one.

The girl presents a totally different picture, though she too suffers from a cerebral diplegia and presents the same paraplegic phenomena as her boy neighbour. There was no difficulty about her birth, but she is a six months child, and she has suffered from epileptic fits since her earliest childhood. She has never been able to walk, and she is practically an idiot. The cortical lesion in the case is one of imperfect development, and the prognosis is, of course, as bad as it could be. I may say, as a matter of passing interest, that the fits were as numerous as ten to fifteen a day when she was admitted to the hospital, but under the influence of bromide they have diminished considerably, both in number and intensity. They are typically epileptic, and the right arm and the face being the parts that are invariably first involved in the tonic contraction suggests that their seat of origin is in the left cortex, and probably in the lower part of the Rolandic area.

I fear I have endeavoured to put a great deal into a very short time, but even such a bird's-eye view as I have been able to afford you may serve to revive in your memories some of the interesting problems which group themselves, like the spokes of a wheel, round paraplegia as its hub.—*The Polyclinic.*

A New and Promising Treatment of Cholera.

BY

LEONARD ROGERS, M.D., F.R.C.P., B.S., F.R.C.S., I.M.S.

Professor of Pathology, Medical College, Calcutta.

Thus, the ordinary drugs hitherto most commonly advised in cholera have not given satisfactory results in my hands, while the transfusions fail in a certain number of very severe attacks, sometimes with hyperpyrexia or typhoid-like fever, evidently of toxic origin. I, therefore, sought for some agent which might conceivably be both antagonistic to the growth and multiplication of the cholera organisms and at the same time act on their toxins in such a way as to render them harmless. The most virulent toxins produced by bacteria, especially those which cause fever, belong to the class of albumoses, which are readily converted into harmless compounds by oxidising agents. Thus, snake poisons are albumoses which are all rendered inert by minute quantities of permanganate of potash, as I showed in 1908. It occurred to me that this salt might be used to destroy the toxin being formed in the intestines by the comma bacillus, as these organisms do not penetrate far into the mucous

membrane, and are not found in the internal organs. The problem was to find a simple method of getting it into the intestine in a form which would allow of the salt being dissolved out during its passage down the bowel. For this purpose pills are made in the following way. Each contains $\frac{1}{2}$ grain of potassium permanganate intimately mixed with two grains of salol, and made into a pill mass with a little tragacanth gum dissolved in alcohol (no glucose being added as it is incompatible). It is now coated with a thin layer of salol 1 part in Sandarach varnish 5 parts. One pill is given every quarter hour for twelve doses on admission, and every half hour for 2 more hours, no food being administered during these five hours. In addition the patient is encouraged to drink a very weak solution of permanganate of potash, $\frac{1}{2}$ to grain to a pint being readily swallowed. Should there be any excretion of toxine by the mucous membrane of the stomach, as in morphia poisoning, it may thus be neutralised. On the following day another course of six pills is usually given, by which time the stools have commonly turned of a greenish colour, and the various symptoms have abated.

This treatment has been in use during the last four months, in addition to hypertonic transfusions when necessary, but the number of cases is too small to allow of any definite conclusions being drawn. The first four cases were of a mild type, not requiring transfusion. Of the last ten cases nine were severe ones, necessitating immediate transfusion on admission, while two of the patients required a second intravenous injection, being of an exceedingly severe type. Another was admitted unconscious in addition to having no pulse, while after three intravenous salines in twelve hours totalling 13 pints he rapidly collapsed again. His pulse kept up for five hours more by continued intravenous injections at a slow rate, but he finally succumbed a few hours later, the disease having been of the virulent hæmorrhagic type from beginning with marked vasomotor paralysis. This was the only fatal case of fourteen, the other thirteen making good recoveries, including ten consecutive, which is a longer series than I have met with in the records of the past ten years. These apparently very favourable results may yet be only a coincidence, but there is one feature of the cases which makes me hope that permanganate has played an important part in producing them. Out of fifteen patients requiring a second hypertonic transfusion this year, previous to the new treatment, no less than 13 died, so that two consecutive recoveries from double transfusions would be in itself remarkable. But that is not all, for the most striking feature of these two as well as of several further severe cases, is that on the day after the permanganate treatment was commenced the patients showed no signs

of the usual very toxæmic and listless condition which is commonly so marked a feature for two or three days after recovery from severe collapse. Again, their temperatures were all normal from the second day, which is unusual in such cases. These facts make me hopeful that the exceptional favourable results recently obtained are in part at least due to the destruction of toxins in the intestines by the drug, and that the desired end has thus been to some extent accomplished. I have certainly seen no harm from the treatment, so feel justified in mentioning it. During the next four months, we shall have the most virulent cholera season upon us, and the new treatment will be submitted to a crucial test. If we can further materially improve on the already low mortality of 33 per cent obtained by the hypertonic transfusions it will indeed be gratifying, for we shall then have at hand a simple drug treatment of cholera which may readily be used as a directly curative measure far beyond the walls of our scattered hospitals, and something may at last be done to lessen this dreaded scourge throughout the length and breadth of India; while Bengal, the reputed home of the disease, may yet furnish the means of checking its terrible ravages.—*The C. M. J.*

Retinal Hæmorrhage in Pernicious Anæmia.

F. HESSE.—Pernicious anæmia, may be defined as anæmia, the origin of which cannot be explained by disease of any special organ or by infection and in which post mortem no definite lesions are found. The diagnosis is often difficult as the condition of the blood is not pathognomonic; in several forms of anæmia, especially that due to hæmorrhage or carcinoma, an identical state of the blood may be found. The writer finds that in pernicious anæmia retinal hæmorrhages are almost constant. In all other forms of anæmia they are extremely rare. The hæmorrhages are usually roundish in outline, but may be streaky, according as they are situated in the ganglionic layer or the layer of nerve-fibres of the retina. They are of a dark red colour, but the centre is occasionally whitish. The more severe the anæmia the more extensive are the hæmorrhages. If recovery occurs, the retinal changes rapidly improve or disappear; usually the first sign of incipient convalescence is apparent in the retina. They are thus of great prognostic as well as diagnostic importance.

Of 50 cases of pernicious anæmia under the writer's care retinal hæmorrhage was present in 47. Of 51 cases of severe secondary anæmia due to various causes (chlorosis, hæmorrhage, hepatic cirrhosis) no case of retinal hæmorrhage was found, although the percentage of hæmoglobin was invariably under 50 and in some as low

as 15. Of 121 cases of anæmia in which the percentage of hæmoglobin ranged between 50 and 70, in no case was retinal hæmorrhage present, although in some there were morphological changes in the blood. Anæmia due to nephritis is naturally excluded from these statistics. Even in the cases of secondary anæmia, which most resemble the pernicious variety, viz., those due to carcinoma, retinal hæmorrhage was never found. Sixty-four cases in this category were examined, 29 of which were cancer of the stomach. Retinal hæmorrhage has been described in chlorosis and cachexia due to malignant disease, gastric ulcer, and intestinal infection, but it is evidently extremely rare.

The occurrence of retinal hæmorrhage in pernicious anæmia has long been recognised, but its importance has been insufficiently emphasized.—*The Medical Review.*

Mosquitoes and Leprosy.

DR. WALTER R. BRINCKERHOFF, Director of the Leprosy Investigation Station at Honolulu, Hawaii, has recently been making some investigations into the question as to whether the mosquito might, in any circumstances, act as a transmitter of leprosy. HUTCINSON once discussed the matter, but dismissed the theory as untenable. DR. BRINCKERHOFF, after carefully reviewing the pros and cons of the subject, concludes that even if it be established that a mechanism exists whereby the mosquito can transmit lepra bacilli to a healthy person and deposit them on the skin in such a position that they will be mechanically inoculated into the tissues, it still remains a question whether the insect plays a role in the actual dissemination of the disease. The only feasible mode of transmission discussed by DR. BRINCKERHOFF is that the mosquito permits the bacilli to pass through its intestinal tract without impairment of its virulence and deposits the bacilli at the time of a subsequent bite upon the skin of a healthy person. The fact that the female *Culex pipiens* does defæcate at the time of biting, according to BANKS and others, makes it within the realms of possibility that the insect may act as a carrier of leper bacilli; but the data at present available do not permit of a positive statement that the mosquito acts in any respect as an agent in the transmission of leprosy, and the probabilities are against such a conclusion. Biting insects play direct and indirect parts in the spread of many diseases, but in the case of leprosy, up to the present time proof in this direction is wholly lacking.—*The Hospital.*

Erythema Due to the Application of Cows' Milk.

H. M. STEELE.—A female child, aged 6 months, was seen. She was a twin, whose sister died from marasmus in the fourth month. Her mother nursed her for 6 months, during which the child did well until worn out by the twin sister's illness and death and two attacks of influenza. She had to partially wean her, although she was doing well and had gained 12 oz. in the preceding 2 weeks. She was given modified fresh cows' milk, obtained from a model dairy. After taking about an ounce a bright red rash appeared about the mouth and on the cheeks where some of the milk had been accidentally spilled. A little later she vomited, but otherwise did not seem ill. Within an hour the rash disappeared. Some milk taken from the bottle in which the milk was delivered was rubbed on the baby's forehead and the same rash was produced in about the same time, but lasted only half an hour. The milk was analysed; its constituents were in the proper proportion and it contained no preservatives. On the writer's skin the milk produced no effect and inquiry among many patients taking the same milk did not reveal any similar case. On the following day the rash was produced both by applications of the same milk and of milk from another dairy, but not by the mother's milk. The rash was not produced by ingestion of milk, but only when the milk was spilled and came in contact with the face. There was only slight regurgitation of milk on this day. The lactose was removed from modified milk, the milk peptonised, and finally was boiled, but these changes made no difference in the production of the rash. The rash at first appeared regularly about 15 minutes after milk touched the skin, and lasted an hour. Then its duration gradually diminished until after 21 days it ceased to appear. The rash was bright red and not raised. Sometimes it was sharply circumscribed; at other times it faded with a pink edge to the normal skin. It corresponded exactly to the area touched by the milk. It never resembled urticaria or appeared to cause itching.—*The Medical Review*.

SURGERY.

The Treatment of Carbuncles.

The treatment of carbuncle in a young and vigorous adult is a matter which rarely gives rise to any anxiety. Free crucial incisions, removal of sloughs, and thorough swabbing with pure carbolic acid usually result in immediate cessation of the inflammatory process and speedy healing.

In the aged, the diabetic, or the subjects of chronic renal disease, the case is far different; and a carbuncle must be viewed with the gravest apprehension whatever its position or extent. Further, if its development is accompanied by but little pain, a low temperature, and a rapid pulse, then the prognosis is bad indeed. The active surgical interference which would be right and proper in a more normal individual is here contra-indicated. A free incision to give exit to pus is permissible.

But particular attention must be devoted to the general condition, and everything possible done to increase the resisting powers. A mistake that is too often made is to diminish the diet too suddenly; for although albuminuria or glycosuria must be treated on the general principles proper to the ailment, yet a too severe restriction of diet may prove the reverse of successful. To go carefully and gradually should therefore be the rule in attempting to reduce sugar or albumen.

In treating the actual carbuncle, a small incision under gas should be made, followed by the application twice daily of a cupping glass in which the pressure can be regulated by a rubber bulb; this passive congestion treatment will often succeed in staying the further progress of the lesion. In more extensive cases it is often physically impossible to apply Bier's treatment, owing either to the size or position of the carbuncle, although it is sometimes possible to get a glass over one or other of the openings with satisfactory results. Local treatment must however, be assisted by measures calculated to increase the toxin-resisting powers of the body. In certain cases isolation of the organism usually (the staphylococcus aureus) and the preparation of a vaccine will be an important measure. But it must be remembered that in these cases the blood is not of such a quality that it can, even with the stimulus of a vaccine, produce an adequate amount of antitoxin, and the indication is therefore to provide the necessary antitoxin by the injection of antitoxic serum. A polyvalent anti-staphylococcal serum should be used in large quantities, the initial dose being 50-75 cubic centimetres. Further doses must be regulated by the amount of reaction and the progress of the local lesion.

The mode of its administration is of some importance. The patient is already infected with virulent organisms, his tissue resistance is low, and hypodermic injections of such a substance as serum in which organisms grow readily is especially liable in these cases to be followed by the development of an abscess. This danger is avoided by giving the serum per rectum. In order to avoid the possibility of the patient's unhappy state being rendered still more uncomfortable by the development

of serum rash or joint pain, it is wise during the injections to administer calcium lactate in five-grain tabloids three times a day. The administration of horse serum alone is valuable, for there can be no doubt that it materially assists the antitoxic powers of the blood.

In regard to the local treatment of the carbuncle, 20 volume peroxide of hydrogen gently syringed into the wounds, acts as a powerful antiseptic, and is invaluable as a cleansing agent. The continued application of hot antiseptic compresses is to be deprecated, as it causes unpleasant irritation of the surrounding skin and is apt to lower its vitality. Wet sterile gauze is more satisfactory. An excellent dressing is the glycerine and clay paste, which has for a long time been in the U. S. Pharmacopœia. It has all the "comforting" properties of a linseed poultice and is much more cleanly as well as being antiseptic. A single layer of gauze should be interposed between the skin and a thick layer of the warm clay poultice. At a later stage, when granulation is occurring, the state of healing may be assisted by packing the wound with gauze soaked in tr. benzoin co. or lotio rubra. Needless to say, abundant fresh air, freedom from business cares and anxieties, good food of the right kind and—if the patient is accustomed to alcohol—a little brandy, are adjuncts of the first importance in assisting a complete recovery.—*The Hospital*.

The Future of Spinal Anæsthesia.

The recent visit of Professor JONNESCO, of Bucharest, to this country, and his demonstrations of the complete anæsthesia to be obtained by injecting into the spinal canal solutions of stovaine combined with strychnine, have once more drawn attention to the claims of spinal anæsthesia in general and the JONNESCO method in particular. And, indeed, it is high time that the profession, as a whole, became conscious of the merits of these new methods of inducing general analgesia, and that some pains were taken to arrive at an accurate estimate of the relative value of the JONNESCO compared with other methods. The marked interest that the demonstrations at the Seamen's Hospital aroused shows how little the profession in this country knew about methods which have been in use in continental operating-rooms for the last two years, and the fact that many surgeons, both in private and in hospital practice, refuse to try the new methods, while others, again, look askance at them and only try them in extreme and very often unsuitable cases, is an added proof that spinal anæsthesia has not yet come into its own in this country.

The reasons for this prejudice in favour of general anæsthesia by inhalation methods are too varied and diverse to be enumerated within

the compass of a brief article. One of the main causes of the prejudice against spinal anæsthesia is ignorance of the technique and want of knowledge of the particular conditions in which it is suitable. It is a grave mistake to suppose that spinal anæsthesia is indicated in cases where an expert anæsthetist would hesitate to give a general anæsthetic. To give it in such cases is to court disaster and to bring discredit upon a method which is really sound and efficacious in properly selected cases. While it has been proved that spinal anæsthesia is quite successful in operations on the upper extremity—the thorax, head, face, and neck—it is nevertheless doubtful whether the JONNESCO method in such cases will ever be popular with English surgeons or, what is much more to the point, with English patients. It has been repeatedly pointed out that the mental attitude of the patient is a very considerable factor in cases of injection analgesia. Most practitioners can recall one or more cases in their own practice in which grave symptoms have followed a simple operation performed under cocaine, and as the literature of spinal anæsthesia increases, instances of dangers and disasters produced by the patient's nervousness or excitability are frequently reported. In general anæsthesia the patient is unconscious; he can offer no help to the operator, but at the same time he cannot embarrass the operation by struggling nervous starts, or even by fainting. While every effort is, of course, taken to prevent the patient seeing the actual steps of the operation, it is almost impossible to arrange matters so that he cannot hear the sounds of the instruments and the talk of the assistants.

Another obvious objection to the use of spinal anæsthesia is the uncertainty that exists with regard to its after effects. The statistics of spinal methods are by no means easy to obtain, scattered as they are in the literature, and they still need careful collation and editing. This largely accounts for the diversity of opinion with regard to the safety of spinal injections for inducing general analgesia. In England, where comparatively small doses of stovaine or novocaine are employed, the percentage mortality has been high—perhaps unduly so—but at all events high enough to make some surgeons chary of employing spinal analgesia under any conditions. With the use of the less toxic tropacocaine and the JONNESCO method, in which the addition of strychnine counteracts the fall of blood-pressure, the percentage mortality has been very much reduced, but, to judge from published statistics, it is still higher than with ether. Then, again, there are the after-effects to be considered, and while it is generally agreed that these are not serious if proper care is taken and suitable cases are selected, the practitioner will prefer to wait until he has fuller information about their possibilities than is available

at present. In the circumstances, spinal anæsthesia is a subject which the expert anesthetist might well investigate at length, and about which he might usefully publish all information that he is able to obtain.—*The Hospital*.

Camphor-Carbolic Acid as a Direct Antiseptic Application to Ulcerated Surfaces.

BY

J. BURTON CLELAND, M.D., Ch. M. (Syd.),

Principal Assistant Microbiologist. From the Government Bureau of Microbiology, Sydney.

Some years ago Dr. Cleland, F.R.S., then Regius Professor of Anatomy at the University of Glasgow, called my attention to the efficiency of a mixture of pure carbolic acid crystals and camphor in equal parts as a local application for small ulcers, such as those which frequently occur in the mouth and adjacent parts. These two substances when mixed together form a somewhat oily liquid with a pleasant smell. When applied to small ulcers in the mouth there is little destruction of tissue, and beyond a slight smarting at the time of application, no unpleasantness. The ulcers themselves rapidly heal after the application. As it is said that carbolic acid when mixed with fatty substances loses its disinfectant properties to a great extent if not entirely, it seemed advisable to test the efficiency of this mixture of carbolic acid and camphor to ascertain whether with the loss of the caustic properties of carbolic acid, there had been likewise a diminution in its anti-bacterial efficiency. Consequently, at the Bureau of Microbiology, the power of the mixture to destroy a young culture of typhoid bacilli was tested. Five drops of such a culture were placed in the mixture for 3, 6, 9, 12, and 15 minutes respectively and were then subcultured, but no growth occurred in any instance.

It is possible that this bland mixture may be of service in other local affections, especially such as are due to bacterial agency. With that object in view this short note has been prepared so that those who have opportunities to clinically ascertain its value may do so. In applying it to the mouth I have found a small pledget of cotton-wool at the end of a probe, dipped in the mixture and the excess of fluid then squeezed out, achieves the result required. Where, however, extensive surfaces require to be healed, it would be advisable to apply the remedy with care to prevent any large degree of absorption of the carbolic acid itself.—*The Australasian Medical Gazette*.

PUBLIC HEALTH & FORENSIC MEDICINE.

The Destruction of Bugs and other Vermin.

THE HYDROCYANIC-ACID-GAS METHOD.

The accidental contamination of a bedstead, a dwelling-room, or of upholstered furniture by bugs or other vermin may occur even in the houses of the well-to-do, and among the poorer classes the difficulty of destroying these vermin is often regarded as so great that families are apt to resign themselves to the presence of these pests in their dwelling-rooms. It may often be of service, therefore, to know a satisfactory method for cleansing houses without the necessity of destroying the furniture, putting the individuals to any great expense, and, when proper precautions are taken, without danger to the inhabitants, provided they are able to vacate for a day or two the rooms that are to be treated. Mr. FLETCHER BARRET, of the Incorporated Society for the Destruction of Vermin, has given a detailed report of experiments undertaken on behalf of the Society for the Destruction of Vermin, and pointed out that entomologists have long noticed that insects vary greatly in their susceptibility to cyanide fumes. The experience gained, however, indicates that the use of hydrocyanic-acid-gas in houses is successful against cockroaches, bedbugs, fleas, clothes moths, ants, white ants, house flies, and other soft-bodied insects; and, as these constitute the majority of the household pests, the use of the gas must now be considered a standard remedy. Moreover, rats and mice are also killed by its use, and it fortunately has the effect of first causing these animals to rush out from their holes into the open, so that the subsequent annoyance of dead mice in walls and under floorings is not experienced. The hydrocyanic-acid-gas is generated from potassium cyanide by means of sulphuric acid, and the general directions for treatment may be briefly summarised as follows:—

- (1) Prepare a tabular statement showing room capacity and amount of chemicals for each compartment.
- (2) Arrange for opening of doors and windows from the outside at the conclusion of the fumigation, and close all registers, fireplaces, and other openings. Do the necessary caulking and remove carpets, rugs, moist-food material, and any metallic objects which are likely to be affected by the fumes.
- (3) Place the generating vessels in each room with a thick layer of old newspapers under each.
- (4) Break up the cyanide out of doors and place it in thin paper bags containing a pound or a half-pound each, according to the amounts to be used in the different rooms.
- (5) Measure into each of the generating jars the proper amount of water, and afterwards add the acid slowly in the proper amount of each of the jars.
- (6) Place the cyanide in the

bags alongside the generating jars in each room. (7) Start at the top of the house and place the cyanide gently into each jar, and quickly leave the room. As soon as the upper floor is finished proceed to the next lower, and pass in this manner from floor to floor until the basement is reached, and exit is made through the lower door. If two persons work together in this operation, they should both be on the same floor together, taking different rooms. (8) On the following day open the windows and doors from the outside, and let the house ventilate for an hour before entering it. (9) After the house is thoroughly ventilated and the odour of the gas has disappeared, the jars should be emptied through the sewer-trap and thoroughly washed.

In order to destroy household insects 1 fl. oz. of commercial sulphuric acid, diluted with 2 oz. of water, and 1 oz. of potassium cyanide (95 per cent.) must be used for every 100 cubic feet of space. For loosely constructed framehouses these amounts should be doubled per 100 cubic feet.

The experiments were made upon a well-built, semi-detached villa, containing eleven rooms. The house was vacated and all liquid and solid foods were removed. The cubic content of each room was carefully computed, and a tabular statement prepared. All the windows were closed, and, where necessary, sealed with moist paper, and the doors and windows were left unlocked, so that they could be opened from the outside. The fireplace fires were stuffed with paper and the registers closed.

Two-gallon earthenware jars were used as generating vessels, one or more being placed in each room; under each jar a thick layer of old newspaper was placed. When everything was made ready the requisite amount of water was poured into the jars, the proper amount of sulphuric acid added slowly, and the potassium cyanide in the packets was gently placed into the vessels prepared to receive them. Having finished the top floor, the operators passed rapidly to the next, and so on to the basement, making their exit through the lower door into the garden. The house was then locked up from the outside and notices put up to caution against entrance.

Next morning the doors and windows were opened from the outside, and, after allowing some time to elapse in order that the house might be aired, it was entered and all the windows opened, and kept open for several hours. All water-taps throughout the house were set running until the cisterns were emptied, lest the water might have absorbed any of the poisonous gas, and the contents of the generating jars were poured directly down the sewers, and the jars at once thoroughly cleansed.

The work of fumigation should be placed in the hands of a trained person, who would carefully consider all the recommendations and precautions and become thoroughly familiarised with them before undertaking the experiment. It follows from what has been said that there may be danger from fumigating one house in a row of houses separated only by party-walls, the other house being inhabited. Unnoticed cracks in a wall would admit the poisonous gas to the neighbouring houses. In such a case a householder must consult his neighbours.—*The Hospital*.

THERAPEUTICS.

The Treatment of Nævus by Radium.

HENRY LEWIS JONES, M.D., F.R.C.P., M.A.—It is now well known that vascular nævi are favourably influenced by radium. Something still remains to be learnt of the technique. The following observations are based upon the treatment of 24 cases in St. Bartholomew's Hospital. The specimen of radium used consists of 15 mgm. of radium bromide, with a radio-activity of about 500,000—that is to say, of about one-quarter of the strength of the pure salt. It is enclosed in an aluminium capsule or button 1 cm. in diameter, and is so fixed as to form an even layer, giving off a uniform radiation from the whole front surface of the button in any position. The application to a nævus is made by fixing the button on the part with a piece of adhesive plaster. A layer of thin gutta-percha tissue is generally placed between the button and the skin. The time of application has generally been an hour, but a somewhat longer time—say an hour and a quarter—seems to be better.

For simplicity the nævi treated have been small, of about the size of the radium button, so that the whole area of the nævus might receive identical treatment. All have been actively-growing, florid nævi in young babies, and all have undergone retrogressive changes after the first application of the radium. A reaction begins in about 5 days by increased redness of the surface, followed soon by a gradual flattening of the nævus if it has previously been raised; then the surface becomes less florid, a little desquamation or the formation of a thin dry scab takes place, and this falls off and reforms several times, while the nævus continues to become paler and of more indefinite outline. At last it fades away and the skin assumes a natural appearance, retaining for some time a faint pink image of the original nævus. No formation of a sore or moist oozing surface has been observed, and the part seems to need no after-dressing. The whole process takes a month or 6 weeks, the latter stages being somewhat slow. No pigmentation has been observed.

The action of the radium is strictly localised to the surface in contact with the button. Probably this may be explained in part by the fact that the aluminium capsule containing the radium is fixed in a brass holder, which has the effect of encircling it with a ring of brass, which would certainly obstruct the passage of the rays through the rim thus formed. In several of the cases treated a portion of the edge of the nævus or a small satellite nævus has been outside the edge of the button, and has persisted or has even continued to grow, while the treated central part of the nævus has been retrogressing favourably. When the nævus has been smaller than the button the healthy skin surrounding the nævus is acted upon, and an inflammatory reaction is produced, so that the mark of the button is made visible, and has usually remained as a red patch for about 3 weeks before clearing up.

An interesting point in support of the theory that radium acts particularly upon young and actively growing tissues is to be found in comparing the effect of radium upon nævi with its effect upon the portwine mark of adults. Although radium is useful in the latter, longer exposures are required and the reaction is less than in infants.

Twelve or one-half of the cases have been cured by a single application. Six have required a second application, 4 are not yet completed, but are markedly improved, and 2 have been treated with a low grade sample of radium for periods of 2 and 4 hours without any marked results as yet. The advantages of radium treatment are that it is painless, needs no subsequent dressings, and leaves no scar.—*The Medical Review*.

Sea Air and Sea Bathing.

V. ZOEPFFEL.—Air, light, and water constitute the three chief factors which make the climate of the sea-side one of the most valuable curative agencies known. That the sea air alone is of importance to the general metabolism is shown by the experiments of LOEVY and MULLER, who used ZUNTZ's respiratory apparatus on the same subjects first in Berlin and then by the sea. In spite of rest in bed there was a marked rise on the second day in the consumption of O and excretion of CO₂. The reason is not clear. The temperature and the humidity of the air changes in the barometric pressure, wind or calm, the degree of electrical tension, the purity and transparency of the air may all play a part. Not only the direct sunlight, but also the reflected light from the sea and shore are of importance. The psychic value of sunlight on all, and especially on the weak and neurotic

is well known. Finsen's school has also shown the importance of sunlight as a factor both in normal metabolism and in diseases of bacterial origin. Heat rays penetrate the sea to a depth of 20 to 23 metres, whereas 1 metre is their limit on land. More heat is therefore finally absorbed by the sea the temperature of which in the winter is higher than that on land at the same latitude. In the summer the rate of heat absorption is slower at sea, and this combined with the constant evaporation from the surface of the sea, makes the climate at this season cooler than that on land. At sea the air contains a relatively high percentage of O while the amount of CO₂ is small in the absence of respiration, combustion, and decomposition of organic matter. It is well known that ozone is found in greater quantities by the sea and near woods than elsewhere, and that it is most plentiful after storms, but till a more satisfactory test for ozone is found its value cannot be properly gauged. Sea air contains sodium chloride only in stormy weather. In calm weather neither sodium chloride nor the magnesium and sodium salts of bromine are demonstrable. Iodine, also, though present in large quantities in seaweed, has not been found in the air. The vapour in the sea air plays an important part in keeping the secretion of the mucous membranes of the respiratory organs moist, less water escapes by the skin and lungs and more excreted by the kidneys. The temperature of the blood is practically constant even with greater oscillations of the temperature of the air. It was thought that this equilibrium of the body temperature was due to the generation of heat rising with the fall of the external temperature and *vice versa*. This is true when the fall of the external temperature is great enough to induce clonic and tonic muscular contractions. Otherwise the regulation of the body temperature is due rather to the changes of the circulation in the skin which controls the loss of heat by conduction, radiation and evaporation. The more readily the cutaneous circulation reacts to small thermic stimuli, the greater will be the organism's resistance to the so-called "chills." The sea wind and the cold salt water exercise the cutaneous vessels, muscles and nerves, as well as the mucous membrane of the respiratory organs so that the strength of the stimulus can be gradually increased. The increased loss of heat leads to an increase of heat generation, due notably to a rise in muscular activity. Cold sea baths act on the skin inducing a spasmodic reaction of the whole heat regulating system. The cutaneous muscles and vessels contract, the muscles of the body follow suit, the blood pressure rises, the respiration becomes deeper, and the action of the heart more powerful, but the pulse is not noticeably quickened. The bath is followed by a reaction during which the cutaneous vessels dilate, the pulse becomes more rapid, while the blood pressure and the arterial

tension fall. By letting the water dry on the body small quantities of salt crystalize out in the folds of skin; the stimulation of the cutaneous nerves which follows, increases the cutaneous hyperemia.

Sea bathing is indicated in anemia especially when this is caused by loss of blood, insufficient nourishment, bad air, worry, overwork or an incomplete convalescence. In the intervals of the specific treatment of syphilis, a course of sea-bathing is especially valuable, provided no contraindications exist. Functional neuroses, nervous dyspepsia, sexual neurasthenia, and sometimes neuralgia are also benefited. The scrofulous seldom stand sea bathing well, but improve quickly in sea air and warm salt baths. Rickets, however, is benefited by sea bathing, as is also the protracted convalescence of pneumonia or pleurisy with effusion. The writer considers sea air of doubtful value for the tuberculous as they are subject to bronchitis before they become acclimatised, but he is struck by the scarcity of tuberculosis among the natives of Libau, and attributes this to the constant influence of the sea air. Early tuberculosis, however, may be benefited in localities where the sea is sheltered from the wind by woods. The aged and children under 1½ years are bad subjects for a seaside resort. All organic heart complaints as well as arterio-sclerosis are also contra-indications. The same applies to weakness and irritability of the nervous system following an acute disease. Sea bathing is actually dangerous in angina pectoris, pulmonary emphysema, epilepsy, and when the subject is liable to attacks of fainting. Diseases of the digestive tract and various conditions of the skin are also aggravated by sea bathing which acts as a direct excitant of muscular and articular rheumatism, and one bath alone is often sufficient to bring on an attack of biliary colic. In England, where rheumatism is common, the older physicians used to prescribe sea bathing, but SIR H. WEBER has lately pointed out its dangers. In 8 of the writer's patients sea bathing regularly induces an attack of rheumatism. FROMM'S words still hold good to-day: "The physician recognises two groups of chronic disease. The organism of the one is capable of reaction to its environments, that of the other has no reserve force with which to react." For the first group he prescribes exercise, cold air and cold baths, sea air and sea baths; for the second group rest, a warm climate, warm baths and Alpine air.

As a course of sea bathing is practically a climatic cure combined with a stimulating form of cold water treatment, patients with little reserve power will become exhausted. Their strength and appetite will fail and emaciation will follow. The writer has frequently observed this in patients from the interior of Russia.—*The Medical Review*.

OBSTETRICS AND GYNÆCOLOGY.

Pregnancy at 56 after the Menopause.

JACOBS—A woman, aged 56, was seen. She had borne 9 children, the youngest being 11; and also had had 2 miscarriages, the last at 49. The menopause commenced at 51, and menstruation ceased a year later. For the last 4 years no hæmorrhage had been observed, though there had been no flushings or other general disturbances. Four or 5 months previously she suffered from abdominal malaise accompanied or followed by abundant leucorrhœa. To this she attached no importance, but the abdomen enlarged and her medical attendant diagnosed an ovarian cyst. She then began to suffer from vague irregular pains in the abdomen similar to those she had previously experienced during her pregnancies. She was seen by the writer 2 or 3 weeks later.

The uterus reached almost to the umbilicus and ballottement could be obtained through the anterior fornix. The foetal heart was faintly heard on auscultation. The breasts were enlarged and milk could be expressed. The writer diagnosed pregnancy of 5 months' duration. He has several times observed pregnancy in women over 50, but never before several years after the menopause.—*The Medical Review*.

OPHTHALMOLOGY.

Two Rare Ophthalmic Cases.

BY

JAMES MOORES BALL, M. D., OF ST. LOUIS.

Case I. *Hydrophthalmos, Trauma, Dislocation of the Eyeball*.—In 1900 a little girl with hydrophthalmos of both eyes was brought to my clinic. The history obtained at the time was as follows: At birth her eyes seemed to be normal. Two or three days later she developed a purulent conjunctivitis. She was treated by a well known oculist. Her eyes gradually enlarged and vision was lost, except for light perception in the left eye.

Five years later, namely July 29, 1905 this child was again brought to me. On the afternoon of this day, while playing alone, she stooped and struck her right eye on a projecting knob of a chair. The mother states that immediately after the accident the eye did not present any unusual appearance. One hour later, however, the eyeball was dislocated. Immediately after the injury she had pain in this eye, which continued for an hour,—the mother says, "until after the eye gradually worked out." I saw her at five o'clock, four and one-half hours after the

injury. After a photograph had been made by electric light, the child was chloroformed, the eyelids were separated with retractors, and the eyeball was gently replaced. A silk suture was passed through the outer third of both lids and a compress bandage was applied. On August 10th, the stitch was removed. During the period considerable fluid ran from the eye. One year later, my records show that only a small stump remained to mark the site of what had been a hydrophthalmic globe.

Early in September 1908, this patient was again brought to me. Her age is now thirteen years. The left eye has become enormously enlarged. It protrudes beyond the eyelids and is often severely painful. She is totally blind.

On September 12, 1908, I enucleated the eye. The operation was done with great care lest the eyeball rupture. The globe was delivered with difficulty, but without mutilation of the eyelids. After having been hardened the globe was bisected. It measured 45 mm. in the antero-posterior diameter, and 30 mm. transversely. The diameter at the base of the cornea was 28 mm. It was larger than any other hydrophthalmic eye of which I have been able to obtain an account in the literature.

The influence which the presence of the eyeball has upon the growth of the orbit is shown in this patient, the right orbit being smaller than the left one.

Undoubtedly the injury to the right eye produced a rupture of the sclera—a fact which accounts for the disappearance of the enlarged eye after it had been replaced in the orbit.

CASE II. *Flat Sarcoma of the Chorioid*.—D.M., male, aged fourteen years, was brought to me in October, 1908. The present trouble began about four months previously. Vision of the right eye has been lost for several weeks. Examination showed an ordinary picture of absolute glaucoma. Tension was plus 2. Owing to opacities in the lens, the ophthalmoscope could not be used with satisfaction. Diagnosis: Secondary glaucoma. Enucleation was advised, and was made on October 13, 1908. After hardening, the eye was bisected. The specimen shows a flat, whitish, jelly-like, elastic mass, situated between the retina and sclera. The retina is detached from the optic nerve to the ora serrata.

Microscopic examination by Dr. C. A. VOSBURGH shows a small round cell sarcoma of the chorioid.

The interesting feature of this case is the shape of the new growth. According to PARSONS, flat, diffuse, or infiltrating sarcoma of the uveal

tract is extremely rare. In 1905, PARSONS was able to collect only 31 cases from the literature. The term "ring sarcoma" has been applied by EWETSKY to those sarcomas of the chorioid which involve also the ciliary body and iris.—*The Interstate Medical Journal*.

Extirpation of the Lacrymal Sac.

CHARLES S. MEANS makes it a rule to operate on the following classes of patients:

First.—Cataract patients who come from a distance and have neither the means nor opportunity for taking a long extended course of treatment before operation.

Second.—Nervous or hysterical patients who are unable to bear the passage of probes or even the use of the syringe. (One man I now recall fainted and was so sick he had to be removed to his home every time either a probe or a syringe was introduced.)

Third.—Children that are practically unmanageable, causing not only an endless amount of bother, but also a liability of injury to themselves by resistance.

Fourth.—Long persistent cases that have not responded to careful treatment.

Fifth.—Travelling or transient patients who would be compelled to be under a new physician almost constantly, running the risk of neglect and greatly increasing the expense.

Sixth.—Persons living in rural districts and unable to be away from home for long extended periods and financially unable to return to the oculist.

Seventh.—Where ulcer of cornea is present.

Eighth.—When malignant growths in the sac are to be feared.

Ninth.—When one eye has been lost and constant discharge endangers the remaining eye.—*The Canadian Practitioner and Review*.

PÆDIATRICS.

Delayed Chloroform Poisoning.

J. BOYD BARRETT records a case which resulted in death sixteen days after a minor plastic operation. The child was a girl, aged 2½ years, and had received a burn some months before on the buttocks; as a result

of this the nates were bound together by a band of cicatricial tissue. The operation, chloroform being the anæsthetic used, lasted from fifteen to twenty minutes. A few whiffs of chloroform were given on the second day after the operation, while the wound was being dressed. On the third day after the operation the child was restless and feverish. She vomited several times during the day and the following night. The bowels were confined. The vomiting continued during the fourth day; it might be described as persistent. The temperature often reached 102° F., and the child was evidently extremely ill. There were no physical signs present, and the usual treatment for gastritis was carried out. On the fifth day the vomiting continued, and the condition was aggravated. Delayed chloroform poisoning was then suspected and, on the urine being examined, acetone, diacetic acid and a trace of albumen were discovered. The utmost measures were taken for the relief of the condition. Half a drachm of bicarbonate of soda was given every four hours. Saline injections and nutrient enemata were given when thought necessary, and later in the illness transfusions of glucose. The bowels were kept free, and the child was dipped in a warm bath every day and wrapped in blankets. The latter measure had to be stopped, as it was too weakening. In the last week of the illness "air-hunger" was well marked, and the child lapsed into a condition of semi-unconsciousness. The vomiting occurred seldom. The child wasted much, and was evidently dying. During the last five days, the fæces became clay-coloured, showing a condition of acholia, due, no doubt, to fatty degeneration of the liver. The pulse at the end became irregular. Taurocholate of soda and sulphocarbonate of soda were given as hepatic stimulants, but with no benefit. The condition became worse, delirium was present, and the case at the close resembled one of tubercular meningitis. The treatment was continued without interruption to the last. Bicarbonate of soda was given in large doses as injections and transfusions. It became impossible to give food by the mouth. Some days before death the urine was again examined. Acetone and diacetic acid were present, one in increased amount. The end came quickly on the sixteenth day after the operation. The child lived an unusually long time, and knowing that cases of recovery had been reported, the treatment was persisted in to the end, and at times the possibility of cure was thought of. No *post mortem* examination was permitted, but there can be little doubt but that the case was one of delayed chloroform poisoning.—*The Australasian Medical Gazette*.

Cases and Comments.

Suppuration in the Region of the Pharynx involving the Eustachian Tube and the Middle Ear.

BY

T. A. SANKARANARAYANAN, M. B. & C. M.

Instructor, Royapuram Medical School.

G. C. R., male aged 30 years, Forest Guard, Chingleput, sought relief on 12-8-09 for deep-seated pain in the right ear and throat; and painful dysphagia; of which he had been suffering for one week previously.

He attributed his trouble to an injury of his throat caused by swallowing accidentally fresh broom tops while working in the forest. He had suffered for several years from tubercular glands in the neck for which he was operated four years ago on the right side of the neck.

EXAMINATION 1. Pharyngoscopy.—The whole pharynx was deeply congested. On the right side, the tonsil was unduly prominent, and there was fulness about the fauces. Digital examination of the pharynx and the tonsil failed to evince any fluctuation but produced severe pain, unaccountable by the condition of the parts.

2. Otoscopy.—Right ear: membrane was easily seen and normal in every respect. No sign of any mischief either in the tympanum or in the meatus could be made out.

Politization was without effect. Catheterisation of the tube was out of question as it caused much pain. Hearing was not much affected, but the patient complained of a sensation of blocking in the ear.

3. Examination of the neck.—There was no pain or stiffness anywhere in the spine of the neck. Right side of the neck was slightly full owing to the enlarged lymphatic glands felt over the sterno-mastoid and behind it.

The scar of the operation for the tubercular glands of the neck was seen behind the upper part of the sterno-mastoid. Pressure in the post-auricular groove and behind the angle of the lower jaw, on the right side caused excruciating pain. With local anæsthesia, the right tonsil was explored; no pus was found. Local applications (by inhalations and fomentations) of moist heat, to the throat, ear and neck; antiseptic gargles to the throat and morphia internally were administered, and continued for some days. These did not improve the condition of the patient in any way. His pain was getting worse every day. After a few days, a swelling was observed to appear in the floor of the meatus of the right ear close to the membrane. This increased

rapidly in size, so that on 19-8-09 no part of the membrane was visible. Temperature rose every evening to 101° or 102°.

Under chloroform the swelling of the meatus was incised; few drops of thick foul-smelling pus issued from the wound. A probe passed into the wound went in the direction of the tube. Examination of the pharynx showed greater prominence of the tonsil and the fauces on the right side. The right tonsil was incised deeply and the wound enlarged with sinus forceps—no pus was found. This operation did not relieve the pain. The patient sought treatment somewhere else for some days.

On 30-8-09 he saw me again. He had then an almond shaped fluctuating swelling in the lower part of the post-auricular groove and behind the angle of the lower jaw on the right side. This swelling extended into the meatus of the right ear which was seen completely blocked up by swelling. Patient complained of severe pain, fever, rigors and inability to open the mouth. He took his nourishment with great difficulty. Temperature was 102°.

A diagnosis of a retropharyngeal abscess pointing externally on the side of the neck was made. On 31-8-09 the usual external operation, by an incision behind the sterno-mastoid, was done under chloroform. A large quantity of foetid pus flowed freely from the wound by the ear and mouth. Digital examination of the abscess cavity revealed an extensive suppuration from the roof of the pharynx downwards into the neck extending into the middle ear and meatus, and communicating with the nasopharynx. There were no necrosed bones. The cavity was curetted carefully, avoiding the carotid sheath with its vessels and nerves. A large drainage tube was put in and the wound dressed in the usual way. Discharge was profuse every day and poured freely by the wound, ear and throat. The fistulous tract was irrigated daily with weak iodine lotion. Patient improved considerably for some time after the operation. But the fistulous tract soon became narrow and the meatus got blocked up by swelling. Drainage was therefore imperfect.

Three weeks after the operation, patient got a relapse of pain in the right ear and mastoid, with fever and rigors. The skin over the mastoid was red, and œdematous spreading of infection backwards to the mastoid was suspected. Under chloroform the wound in the neck was extended upwards over the mastoid, concentric with the post-auricular groove, the root of the pinna was detached from the bone and reflected forwards. The antrum and the tympanum were exposed. The latter was

full of granulations which were curetted carefully. There were no remains of the ossicles in it. The bony wall of the meatus which was found necrosed and loose, was removed. There was copious discharge by the wound and throat daily, and the dressings had to be renewed, and the throat gargled frequently. Patient got relieved of his pain, completely after this operation. But for months the suppurating tract showed no tendency for healing, and the external wound became narrow in spite of all attempts to keep it wide open. Drainage was imperfect and pus burrowed downwards into the neck.

The wound was enlarged downwards and the cavity was again curetted. The styloid process was found to be dead and loose. It was removed easily.

After this operation the discharge diminished gradually in quantity, and the cavity filled slowly. After a protracted period of five months the fistula closed with much retraction of the soft parts between the mastoid and the angle of the lower jaw. The meatus of the right ear was completely occluded being involved in the scar. The right ear was practically useless for hearing; though hearing by bone conduction was not much affected.

The points of interest in this case are:—

(1) The retropharyngeal abscess in this case, which started in the cellular tissue between the prevertebral fascia and the bucco-pharyngeal fascia instead of pointing into the pharynx burrowed through the cellular tissue around the eustachian tube to the middle ear and finally pointed at the floor of the meatus and behind the angle of the lower jaw. This was because of the deep situation of the abscess external to the lateral wall of the pharynx opposite to the situation of the tonsil.

(2) In this case, if an internal (oral) operation (which is generally preferred to external operation) with preliminary tonsillectomy was performed early, it would have averted all the damage done to the ear and minimised the suffering of the patient. But such an operation is attended with the risk of injuring the large sized vessels that are in close proximity to the lateral wall of the pharynx.

THE ANTISEPTIC.

MARCH, 1910.

Medical Ethics—"Made in Germany."



FEW days ago we noticed in one of the local newspapers an advertisement in these terms:—

"Eye, Ear, Throat and Nose patients who wish to consult Dr. Schwarzbach (Berlin), previous to his return to Europe, may do so at Glenview Hotel, Coonoor, for a few weeks."

We were told that some weeks ago similar advertisements appeared in the same paper directing the attention of the public to the arrival of this German doctor in Madras at a particular hotel and expressing his readiness to see and treat patients. It seems that the eminent doctor was sent for by a rich Parsee patient in Bombay and, having some time to spare, he had come to Madras, and having done so, was anxious to give the benefit of his professional services to the suffering population of the city. Noble sentiments, no doubt. For aught we know the German professor may be a great philanthropist. But what we should like to know is—Do medical men advertise in the newspapers in Germany? We are not familiar with medical ethics as understood in Germany. Perhaps the professor is only following the professional custom of his fatherland in advertising the last few weeks of his stay in this country very much as Messrs. Wrenn and Bennett advertise the last few days of their clearance sale. Or perhaps the professor may have heard that east of Suez there are no Ten Commandments, and where the Ten Commandments could not exist medical ethics have not a ghost of a chance to survive and must have disappeared long ago. However, we wish the German professor a pleasant stay at Coonoor and *bon voyage* after that to his fatherland. The greatness of the German professor will go with him. But we are afraid that the example of the advertisement may remain behind. We wish to remind our fellow medical men that our medical ethics, like the government of this country, we get from England. And, according to English ideas of medical ethics, advertisements

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like those resorted to by our German visitor are highly objectionable. According to Professor Saundby of Birmingham, who is an acknowledged authority on medical ethics in England, "no medical practitioner should seek publicity by advertisement. * * * " And, says Professor Saundby "the only advertisement to the public now permissible is the door plate, which should be of modest size and should preferably contain nothing but the Practitioner's name, though it is not uncommon to see the words 'Physician and Surgeon' or 'Surgeon' placed after it. It is not thought right to indicate a speciality upon the door plate such as 'Ophthalmic Surgeon.' " And so on. Here again the conditions of the East differ somewhat from those of the West. There are more illiterate people in Madras than there are in Birmingham. And so we are told that a certain medical gentleman had the picture of a human eye painted on his door plate. The idea is excellent though not quite original. If we are not mistaken, the credit of inventing such pictorial notice boards belongs to one of the Railway Companies in India. But unfortunately in the field of medical specialism the application of the idea is limited by natural circumstances. It is all right for an oculist or aurist or laryngologist to have such a door plate, but the gynæcologist or obstetrician cannot very well indulge in such pictorial representations. So, on the whole it would be better for our ingenious medical colleague to give up such sign boards and stick to the time-honoured and orthodox door plate with the well known legend such as Bob Sawyer M. D. or Benjamin Allan F. R. C. S.

We would not have written on the subject at all had it not been painfully apparent for some time past that some of the members of the medical profession in Madras show a decided tendency to ignore the unwritten but time-honoured principles of medical ethics. When the profession in India is demanding for greater State recognition it is as well to bear in mind that it ought to conduct itself in such a way as to extort respect both from the Public and the State. It was by the strict observance of certain well known principles and rules of conduct, as well as by the efficient practice of the healing art, that the medical profession established its present proud and honoured position in human society. To ignore those principles and to trample over those rules of conduct now, in the hurry and excitement of the modern struggle for existence, would have the disastrous effect of lowering the dignity and honour of the medical profession in the estimation of the public. We hope that medical men in this country will bear that in mind always. Recognition and respect do not come by repeatedly asking for them. The easier way to get them is to deserve them by your conduct.

THE ANTISEPTIC.
CORRESPONDENCE.

[MARCH,

A case of Poisoning by Aconite and Belladonna.
SIR,

B.L., a young healthy Brahmin woman aged about 20 years and mother of 3 children, some days back received from her husband in Sholapure 2 similar bottles, one containing about an ounce of Chlorodyne and the other containing about one ounce of Lint Belladonna and one ounce of Lint Aconite mixed together. Her relations told me instead of taking a few drops of Chlorodyne, by mistake she caught hold of the other bottle and drank the whole quantity of the liniment at about 9 A. M. on 14-2-10. As soon as I heard about this case I went to the patient's house and had her brought to the dispensary for treatment. At her house I saw the patient vomiting, somewhat delirious, and extremely anxious and frightened. She was brought to the dispensary at 11 A. M., that is, 2 hours after swallowing the poison. When brought to the dispensary she was still vomiting, violently delirious, pupils widely dilated, body cold, and pulse at the wrist extremely weak and could not be counted. Vomits every now and then; delirium so violent that 6 strong and healthy persons could with difficulty keep her under control. She bit her mother-in-law on the cheek and tries to bite and kick every body. Legs are getting very cold. Does not open her mouth and swallow anything. As she was already vomiting much, she was not given any emetic. She was given immediately the following:—

R—Milk, 3j.
Brandy, m. 120.
Tinct. Digitalis, m. 5.
Tinct. Nux. Vomica, drops 2.

Mft. To be given every 5 minutes.

Each time she perhaps swallowed only about $\frac{1}{3}$ of this and not more.

14th, February, 1910—12-15 P.M.—Vomited twice. Repeat above milk mixture every 10 minutes and cover body well.

1 P. M.—Vomited again twice. Patient worse. Continue above milk mixture every 15 minutes.

R—Tinct. Digitalis, m. 5.
Brandy, m. 25.

Mft. inject under skin.

1-15 P. M.—Patient same as before. Repeat mixture and give another injection of brandy and digitalis as above. By means of an irrigator about 10 ozs. of milk and 2 ozs. of brandy were thrown into the lower bowels.

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2 P. M.—This milk and brandy enema was retained. Patient slightly better. Pulse can now be counted at the wrist.

3 P. M.—About 20 ounces of urine drawn off by a catheter and again an enema of milk and brandy given as before, and the above milk and brandy mixture also was continued as before, every hour instead of every 15 minutes.

4 P. M.—Pulse improving; delirium less. In addition to the above, she was given strong coffee, about a table spoonful almost every 15 minutes. Everything had to be forced down her throat, part of which she swallowed and part spat out.

6 P. M.—Patient same.

7 P. M.—Decidedly better. Continue above milk and brandy mixture every hour.

9 P. M.—Much better in every way. Continue mixture every second hour.

15th February, 1910—1 A. M. Bowels moved once well and urine passed freely. Took sago congee twice. Continue mixture every 3rd hour.

6 A. M.—Slept pretty well. As the breasts were painful and tense, milk was drawn off from them. Took a good cup of strong coffee. Is cheerful and feels almost quite well.

8 A. M.—Doing well. Has slight giddiness.

10 A. M.—Took some boiled rice, milk and ghee. Continue above milk and brandy mixture every 4th hour.

12 noon.—Feels better. Took some milk.

2 P. M.—Took some sago congee.

4 P. M.—Took a good cup of coffee and milk.

7 P. M.—Is all right. Took boiled rice, milk and ghee as usual with relish.

9 P. M.—Took a cup of milk.

16th February, 1910—7 A.M.—Slept very well last night. Is quite well.

8 A. M.—Took a cup of coffee and milk. *Discharged cured.*

N. V. MOODLIAR, L. M. S.

Medical Officer, Mangalvedha, near PANDHARPURE.

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Original Articles.

• COLITIS.

BY

J. BERNARD DAWSON, M.B., B.S. F.R.C.S. (ENG.)



ROUND the subject of Colitis has waged a war betwixt physician and surgeon which has led even now to inconclusive results. Although the surgeons have to some extent taken upon themselves the treatment of this condition, still, in the main, the physician remains paramount in its treatment.

Great confusion has arisen because of the diverse and extensive nomenclature that has been invented to describe the varying forms and degrees of colitis. The writer, in a paper published in the *British Medical Journal*, attempted to simplify this matter and avoided, as far as possible, such complex and confusing titles as Muco-membranous Colitis, Colica Nervosa et Mucosa.

It has been clearly shown that the casts which are passed in certain forms of colitis are in no way membranous but consist to a great extent of inspissated mucous; therefore the use of the word "membranous" should be avoided and the phrase "Colitis with Casts," substituted. Again much argument has been aroused by the question as to how far there is a nervous element in some of these cases of colitis.

Physicians have gone so far as to affirm that the condition is entirely a neurosis and that the local phenomena are due to a deranged enervation of the colon.

The writer has always held that the nervous symptoms which are so pronounced in some cases of colitis are the effect and not the cause of

• Specially contributed to *The Antiseptic*.

given in fractional doses continuously is the only one which has had apparent effect.

The work of METCHNIKOFF upon the fauna and flora of the great intestine tends to show that it is to bacteriology that we must look for a satisfactory means of combating the harmful inhabitants of the great gut. He has shown that the lactic acid bacillus is antagonistic to the bacilli of the colon and that milk freshly curdled by an active strain of this bacillus acts as an antiseptic to the great intestine.

Preparations of the lactic acid bacillus are made by most of the wholesale chemists, and, in the main, these articles are reliable.

The Use of Enemata and Colonic Douching.—It is not possible to satisfactorily wash out the whole length of the colon by means of injections administered per rectum. Even the cleverest nurse using a long flexible tube, cannot succeed in making the fluid reach the ascending and transverse colons. In cases of colitis this is particularly so, for the inflamed mucosa means greater irritability, and the injection is forcibly returned as soon as the sigmoid becomes distended. Certain cases, where the mischief is confined to the rectum and sigmoid, copious rectal douche may produce improvement and even cure. The great drawback, however, is the fact that the cleansed surface is almost immediately again soiled by the descent of faecal material from above the zone of the douche.

How far medication of the fluid used is an advantage is difficult to say, for any antiseptic strong enough to exert a bactericidal action upon the germs present is also strong enough to damage the mucosa. Certainly good results can be obtained by the use of sterilized water alone.

Alkaline fluids, such as 4 per cent. solution of Sodium Bicarbonate, or diluted Glycothymoline are of great use when there is much mucous.

In ulcerative cases astringent douches are indicated, such as very weak solutions of Silver Nitrate.

Where there is great irritation and tenesmus and severe hæmorrhage accompanied by symptoms of grave constitutional disturbance, one pint injections of warm olive oil administered to a patient in the knee-elbow position, and retained for as long as possible, are of great use.

In hypertrophic conditions 6 or 10 ounce injections of Hydrogen Peroxide, 10 volumes per cent, retained for half an hour, are of use.

The Surgical Intervention in Colitis.—The only procedure which is of undoubted value is the operation of appendicostomy. By this the appendix is brought through the abdominal wall and, after being

secured, is opened by amputation of its apex. Through the lumen is passed a catheter, so that fluids can be passed direct into the caecum and colon.

By this means not only can the whole colon be thoroughly cleansed but it is entirely emptied, thus enabling the damaged mucosa to enjoy a rest both from active movement and from contact with faeces.

It is best to use 6 or 7 pints of the appropriate fluid warmed to 98° F. There is never any trouble with the fistula thus produced. There is no leakage, and the sinus shows a constant tendency to close, so much so that efforts have to be made to keep it patent. When a cure is obtained it is wise to keep the opening capable of dilatation for two or three months in case of relapse. If at the end of this time all is well, the opening can be easily closed by destroying the mucous membrane living and allowing it to cicatrize.

In conclusion, the writer's opinion is that the confusion which has existed about Colitis is due to the fact that it is not sufficiently recognised that the colonic mucosa, like other mucous surfaces, is subject to the usual varieties of inflammatory mischief, but that different observers have seen these pathological conditions in all stages of inflammatory changes, and that thus many varying phenomena have been described and named.

*THE USE OF ALKALIES IN GASTRIC DISORDERS.

BY

G. RAMAN PILLAI, M. B., CH. B. (EDIN.)

Thambu Chetty St. Madras.

Although the physiology of digestion is still somewhat obscure, and no definite rules can be laid down as regards the administration of alkalies in gastric affections, a consideration of the subject in the present state of our knowledge, may be not uninteresting.

Alkalies are given in certain gastric disorders with a view to neutralising the acids that are the products of abnormal activity of the stomach.

In health (unless, of course, some other acid is taken along with the food) hydrochloric acid is the only acid present in the stomach; it is present in the stomach during active gastric digestion only; and its total quantity and strength of acidity vary but very little. As soon as

* Specially contributed to *The Antiseptic*.

proteid food enters the stomach, the HCl. is poured out on it continuously by the secreting glands. This secretion attains its maximum in about half an hour (15-40 minutes)—the first "acid tide."

The whole of this acid combines with the proteids and alkaline bases of the food constituents, leaving no more free acid in the stomach until the second acid tide occurs, which reaches its maximum in about one hour after food. This second acid partly combines with any remaining proteids, and partly remains free—the presence of the free HCl. inhibiting fermentation of starch, and also stimulating pancreatic secretion when the gastric contents pass down the duodenum. In about three hours, peptonization is completed, and the food leaves the stomach soon after.

Under *abnormal conditions*, other acids—lactic, acetic, butyric, etc.—may be formed in the stomach towards the end of digestion. The HCl. may be (1) absent (as in cancer); or (2) secreted irregularly in a fasting stomach—"hypersecretion," either periodic or continuous—or (3) secreted during digestion in too great a concentration—"Hyperchlorhydria."

The circumstances, therefore, under which alkaline interference is indicated (although the relief afforded in many cases is merely symptomatic) are:—

- (a) Hyperchlorhydria, often associated with gastric ulceration;
- (b) Hypersecretion in the fasting stomach (probably a gastric neurosis);
- (c) Acid fermentation;
- (d) Gastric Catarrh.

Let us consider what we may expect to result from the administration of alkalies at different phases of gastric digestion:—

Given in solution, half an hour before a meal, in a resting stomach, the drug is soon absorbed (in about 15 minutes) and there is no chance of its interfering with the digestion of the next meal. A glass or two of hot water with gr. x of Soda Bicarb. and gr. ii of Sodium Chloride in it, taken at this time, removes any catarrhal mucus adhering to the mouths of the gastric glands, leaves the entire secreting surface fresh and free to perform its function when the call is made for it. This action is somewhat analogous to that of soap and water on skin surfaces. It can take the place of lavage.

Given with, or immediately after, a meal containing proteid the alkalie interferes with peptic digestion, because the normally secreted

HCl. is neutralised. Even if too concentrated an acid is being secreted at this stage, it would be well to withhold the alkalie until sufficient time has been allowed for the peptonisation of what proteid there is in the stomach—in other words, until the symptoms of hyperacidity are evident (this indicates the period when all the proteid affinities have been satisfied, and no more acid is required for proteolysis.)

This would mean that alkalies are required about three hours after food (or earlier, if the symptoms indicate their use) in order to neutralise the offending acid. Bismuth Carbonate, Magnesium Carbonate, or prepared chalk may be given with some Soda Bicarb. in these cases, the quantity varying with the effects produced.

The insoluble carbonates prevent a too rapid neutralisation, act only on the free acid, and remain practically inert after the free acid has been neutralised. In hyperchlorhydria complicating gastric ulceration, when the case does not necessitate rectal alimentation our aim should be to make the food (which may be given peptonised and rendered alkaline by soda) stay in the stomach for as short a time as possible, and to keep the secreted HCl. from irritating the diseased mucosa. We do not here want the stomach to take any part in digestion. A suitable formula for this is:—

Bismuth Carb., gr. xx.

Magnes. Carb., gr. x.

Soda Bicarb., gr. v.

Aqua ad ℥ i.

Haustus. ½ hour before meals, thrice daily.

By giving this mixture before food, the soda neutralises any acid that is present at the time of taking the mixture; and the insoluble carbonates, spread out over the mucous surface, and lie in ambush, as it were, to attack the HCl. poured out on the entrance of food in the stomach—in this manner to protect the ulcer until the irritating contents are expelled from the stomach. Large doses of the carbonates (*e.g.*, 200 gr. Bismuth Carb.) have been given with great benefit, in such cases.

If hypersecretion (*i. e.*, in a fasting stomach) is to be dealt with, large doses of the carbonates are exhibited during the attacks. As much as 6½ drams of Soda Bicarb. in 24 hours was given in a certain case with brilliant result.

When fermentation acids have to be counteracted by means of alkalies they are best given about four hours after meals. An interesting question arises in this connection: If an acid state of the food when

it reaches the duodenum is an absolute necessity in order to stimulate pancreatic secretion (as some physiologists hold), would not our alkalinization of the food, just on the point of leaving the stomach, indirectly suppress pancreatic secretion, and seriously interfere with the intestinal digestion?

So far, we have been confining our attention on proteid foods mainly. In relation to a meal composed mostly of proteids the action of alkalies will be expected to be as we have stated above. But, what are we to expect when the meals consist almost entirely of carbohydrates? Under such conditions, we do not require the acid of the HCl. for the process of digestion to be carried on; not only so, the presence of this acid in the stomach in any appreciable quantity during the first few minutes of digestion, would be a positive hindrance to amylolysis (which can only be carried on by the ptyalin, in a neutral, or faintly alkaline, medium). Are we here to step in with a small dose of alkali to be given along with, or just before, food, with the intention of keeping the gastric contents slightly alkaline until such time—(amylolysis is completed in a favourable medium, in about 15 minutes)—as we think all or most of the starch has been converted? Rationally, we would give an affirmative answer. And, were we able to determine the exact reaction of the stomach contents during several phases of digestion (even supposing there are patients who will submit to a tedious course of test-meals followed by lavage, from an experimenting doctor), we may probably succeed in our symptomatic administration of alkali when the acid is discovered to be in excess.

In conclusion, therefore, in prescribing alkalies for stomach disorders, we should consider several points:—

(a) *Why* they are given—

1. To clear the secreting surface of any catarrhal mucus.
2. To neutralise excess of acid, HCl. or fermentation acids as the case may be.

(b) *When* they should be given in order to attain the above objects, without interfering with the natural process of digestion.

(c) In what *form* and in what doses the best results can be obtained.

* INFANTILE DIARRHŒA, ITS CAUSES AND TREATMENT.

BY

JOHN DEVASIKHAMANI.

Civil Medical Assistant, Madras.

Introduction:—Diarrhœa is one of the commonest signs of intestinal disturbance in infancy and childhood. Diarrhœa, *per se*, is not a disease. It has, however, assumed such a great importance by carrying away a large number of infants, that it has not only been dignified with the title of a disease—nay has been recognised as one of the foremost fatal affections of children. This disease has been the scourge of infancy the world over and, to quote statistics in one particular country, out of 22,000 deaths that occurred in Great Britain in one year from diarrhœa, 17,000 occurred in children under *one year old*. In Madras, however, the system of registration of births and deaths is very unsatisfactory, as it is carried on by unqualified men in such a hap-hazard-manner, that no reliance whatever can be placed upon the records for the purposes of a scientific investigation of this nature. Efforts, I understand, are being made to rectify this defect. At any rate, it would

Year.	No. of Children born.	Died under one year.
06-07	18217	5747
07-08	20152	5652
08-09	19137	5791
		<u>17,190</u>

be interesting to note that according to the Vital Statistics of the Corporation of Madras, on an average for 3 years 29.5 per cent. of infants making a total of 17,190 do not live to see their first birthday. Knowing that the child is the father of the man, it behoves every practitioner in this country to do his level best to prevent the occurrence of the disease as far as possible and also to combat the disease successfully when it sets in.

Etiology:—It is a disease chiefly due to errors in diet. It is met with more frequently in *bottle-fed* infants than those that are *breast-fed*. In the former case, it is usually traceable to errors in the quality of *food*, while in the latter to the *feeding*. It is sometimes possible that maternal milk does not agree with the infant but fortunately such instances are rare.

For purposes of classification the causes of infantile diarrhœa may be stated as under:—

I. *Pre-disposing causes*—

- (a) Extrinsic.
- (b) Intrinsic.

* A paper specially contributed to *The Antiseptic*.

II. *Exciting causes.*I. (a) *Extrinsic causes* :—

1. *Bad hygienic conditions* :—Diarrhoea is most prevalent where infants are brought up in damp, over-crowded and ill-ventilated houses which have been fouled by sewer-gases, emanations from cesspools, dung-heaps, etc. The mortality of infants of the poorest classes of people is therefore very great.

2. Living in large cities or towns pre-disposes a child to recurrent attacks of diarrhoea, so much so that in practice it is found to be of great advantage to remove a child suffering from diarrhoea, to a village or country-side.

3. Another important reason is, that the children are particularly susceptible to chill. It lowers the resisting powers of the tissues generally and of the alimentary canal especially.

4. *Weather and season of the year* :—One of the gravest and most fatal forms of diarrhoea is the so-called Acute Summer Diarrhoea of children. The disease is largely prevalent during the hot months of the year from May to October. These are not the regular summer months, and to be accurate it must therefore be stated that it occurs during the late summer and early winter (rainy) months. This is accounted for by the fact, that the curve of Epidemic diarrhoea does not follow the temperature of the *air* but that of the *soil*. The higher the temperature and the longer the summer heat lasts, the greater is the havoc done by the disease. And again the heat of summer favours the growth of certain organisms in the milk with great rapidity.

(b) *Intrinsic causes* :—

1. *The age of the infant* :—The younger the infant the greater are the chances. The new born babe which depended upon its mother for its nourishment is, in a few hours after birth, called upon to perform the elaborate task of digesting and assimilating its food independently with its delicate digestive mechanism. A recollection of the knowledge of Anatomy and Physiology will remind one how the child is placed at a disadvantage with its partially developed salivary glands and pancreas and how its very life is imperilled, even when there are slight digestive disturbances.

At the age of 6 or 7 months when they crawl about they have a tendency to stomach anything they chance to pick up which sets up gastro-intestinal irritation producing a very severe form of diarrhoea.

2. *The food of the infant and its digestive apparatus* :—Children are mainly fed upon milk which is anything but a germ-free fluid ; the

sterilising power of the child's stomach is very little, as it secretes very little (HCl) and the organisms which are swallowed with the food have a good chance of overcoming its weak powers and settling themselves comfortably in the intestines to set up irritation there.

3. *Constitutional causes* :—An infant born prematurely has less vitality to resist evil influences. Children suffering from Rickets are peculiarly susceptible to Catarrhal affections of this nature.

II. *Exciting causes* :—

1. *The food* :—In artificially fed babies diarrhoea is very common arising from the use of impure or stale cow's milk, from the too early and excessive use of starchy foods or from the employment of solid and unsuitable food as rice, fruits, etc. Out of 1,943 fatal cases of Holt's 1,885 occurred in artificially fed children.

2. *Bacteria* :—Many of the severest forms of diarrhoea, especially the acute summer diarrhoea, are most certainly due to bacterial infection. Individual observers have concluded from their own researches that this or that micro-organism is the chief factor. It is, however, worthy of note that DUVAL and BASSETT working in the Thomas Wilson Sanatorium discovered in the dejecta of children suffering from Summer Diarrhoea a bacillus identical with the organism shown by Shiga to be the cause of Epidemic dysentery in Japan. In 1903 Rockefeller's institute showed that this organism was present in a large number of cases which fact has been confirmed by FLEXNOR and HOLT.

3. *The relation of flies* :—Many observers as Dr. NASH, Medical Officer of Health for Southend, Dr. BRIDGE of Devonport and Dr. EDMUND SMITH, Medical Officer of Health for New York have suspected and referred to the mischievous part played by the house-fly in the production of infantile diarrhoea. I for one believe that the carrier of infection to the food of the infant is our long unsuspected enemy the common house-fly. He is suspected to be responsible for more affections than one, Typhoid, etc., and, if I am permitted to digress a little, I suspect also for the intestinal parasites in children, *viz.*, *Ascaris Lumbricoides* and *Oxyuris Vermicularis*—which question I intend working out at some future date.

I would, therefore, suggest that a crusade of extermination be instituted successfully against the house-fly if infant mortality by Summer Diarrhoea has to be kept at a low minimum ; the procedure can do no harm to anybody while on the other hand a good deal of benefit may arise.

4. *Local irritation* of the bowels by hard impacted faecal matter may occasionally produce constipation alternating with diarrhoea. Some

of the intestinal parasites also are reputed to be sometimes factors in its causation.

5. *Local diseases*:—Ulceration of the bowels and tuberculosis of the intestines—*tabes mesenterica*—are always associated with looseness of bowels and ought to be diagnosed from ordinary diarrhoeas of infants.

6. *Drugs*:—Certain drugs, especially poisons, produce symptoms simulating Summer Diarrhoea. Children who are breast-fed may be affected through milk by drugs taken by the mother, as castor oil, *senna*, &c.

7. It may also be due to one of the Specific infectious diseases as Enteric, Measles, etc.

8. A peculiar form of Diarrhoea of nervous origin is known as the Lienteric Diarrhoea.

Though not specified in the title for the essay it would be of advantage to speak in general of the symptoms of infantile diarrhoea. I do not propose to deal with them under the varieties described in text-books but shall confine myself to the most important ones which require special methods of treatment and therefore demand special mention.

The most common symptoms that perplex one in practice and at the same time point definitely to the nature and seat of mischief is the character of the stools.

First of all there is the green motions commonly met with. What is the cause of the greenness? Some suppose that the greenness is due to the development of a micro-organism which produces the pigment. Though it cannot be denied, in many cases it is due to the bile pigment being hurried through the intestines without undergoing the usual changes.

The 2nd variety is offensive putrid stools. What does this indicate? It is due to the reason that in the upper part of the intestines the peristalsis is too rapid to allow the food to be properly digested and assimilated and that a mass of imperfectly digested food is hurried on and gets lodged in the colon where it undergoes putrefaction giving rise to the putrid stools.

The 3rd variety is the acrid, pungent and irritating stools, as evidenced by the smell and by the production of an erythematous eruption over the buttock due to the development of fatty acids as butyric acid, etc. In these cases an alkaline treatment is indicated as Bicarbonate of Soda, or a few grains of Citrate of Soda in the case of bottle-fed infants may be added to each ounce of milk given to the baby.

Another important variety which must be distinguished is the frothy, cheesy stools consisting of white particles in small round lumps about the

size of a coriander seed scattered all through the faecal matter. These particles consist chiefly of casein the remains of undigested milk. If diarrhoea is associated with this condition, here is a most certain indication that the child is getting more food than he needs or rather than he can digest. In these cases if one takes the trouble to enquire into the system of feeding, he will invariably find that there has been no regularity in the hours of feeding and the only indication has been the cry of the infant and at each cry more food was given the child. In these cases the mother should be impressed the necessity of feeding the infant at regular intervals and that the cry of an infant does not necessarily mean hunger but also thirst, wet clothes and pain etc.

The 5th variety I would like to mention is the mucous slimy stools clearly pointing to the involvement of the large intestines due to the fact that the large intestines are mainly lined by mucin forming cells while in the small intestines they are few. In these cases, I prefer Bismuth to any other, in large doses.

I have yet one more variety to deal with and I have done. It is the thin copious, watery and serous stools having no faecal matter. This is usually accompanied by vomiting and collapse and indicates a very serious affection *viz.*, the epidemic form. This form runs a rapid course in many cases and the infant may be moribund in a few hours. The symptoms of collapse in an infant are the depressed fontanelle having the same significance as a very feeble pulse in an adult the fall of temperature the increasing restlessness and the shrunken and wrinkled skin. "The skin instead of falling when pinched is apt to remain in folds and is one of the signs to be looked for in infantile diarrhoea." Many observers conclude that it is due to the involvement of the kidneys and in these cases there is partial suppression of urine while examination of urine shows presence of albumen. In these cases special lines of treatment to stimulate the kidneys as well should be adopted.

Coma accompanied by too high or a fall of surface temperature is a sign of fatal termination and unless present, the case is not hopeless however desperate the condition of the infant may appear to be.

The pathological changes found in fatal cases are few. The whole intestinal mucosa may be swollen and inflamed and lymph follicles are found to be enlarged oedematous.

Treatment:—

(a) Prophylactic.

(b) Hygienic.

(c) Curative.

Prophylactic:—Preventive measures rank first in importance.

A rickety child may be advantageously sent away out of town to country side or village during summer. The infant should be clothed so as to protect it from chills. Clothing should be light and loose and a flannel binder ought to be applied around the abdomen. In the case of breast-fed infants weaning should not be undertaken during summer, while in the case of artificially fed children, extra care and cleanliness should be bestowed upon the process.

The importance of carrying out artificial feeding in a thoroughly clean and scientific manner cannot be over-rated. "It is essential that before treating a case arising from errors in diet, the medical adviser should have clearly in his mind what ought to be the normal diet of an infant, the method of preparation, the frequency of feeding, the amount to be given at any given age and kindred questions that may come up to him for reference." And again one need not be long in practice to realise that under modern conditions the number of women who can or do nurse their own children is getting smaller in this country. It is mostly due to the foolish system of early marriage in this country and girls who are a little more than children become mothers before they are fully developed. Another reason is that most girls that attend school improve their intellect at the expense of their health, as the social conditions existing in this country do not permit them to take open air exercises &c. and the consequence is that they become bad nursing mothers. It also seems to be a part of the price we have to pay for the so-called civilisation. I therefore propose to give in this paper in detail the best method of artificial feeding in practice based on the plan recommended by DR. SOUTHERLAND.

In the absence of mother's milk a wet nurse is the best substitute; but in practice one does not find chances to do so as there are many practical and social obstacles in this country so that cow's milk is the substitute in practice. If one cannot bring up his own cow for this purpose which is quite easy and not expensive in this country the milk should be obtained from a clean dairy farm and should be delivered as soon as possible without being altered in any way, in air-tight bottles which have been sterilized previously. Unboiled milk is probably the more nutritious form of diet but if there is any doubt as to the purity of the milk it may be boiled on delivery. This probably serves the purpose but has the disadvantage of so altering the taste of milk as to render it unpalatable for infants. A better plan is to put the milk containing pan into another containing water and to bring the water to the boil (an enamel apparatus for this purpose may be had from Messrs. Spencer & Co for Rs. 1/4. The boiling should be continued for five minutes at the end of which time the milk should be removed and cooled rapidly and then

transferred to a clean glass bottle, fitted with a lid or covered with a fine muslin or plugged with cotton wool and placed in a cool place.

Before being given to the infant it should be diluted in order to bring the proportion of solids as nearly as possible to that existing in breast milk. For the first fortnight the dilution may be of the strength of milk to diluent as 1:3 then up to the age of three months 1:2: from the age of three to six months may be 1:1 and from six to nine months 2:1 and after nine months, twelve months pure milk may be given from 1½ to 2 pints daily. Barley water is a good diluent if properly prepared as follows:—A table spoonful of pearl barley is washed and put in a saucepan with one pint of cold water. This is brought to the boil and then allowed to simmer beside the fire for half an hour. The water is then strained off and used as required. Some infants seem to agree better with barley water and others with plain boiled water or lime water.

Sugar has to be added to this diluted milk in order to bring it up to the standard. Sugar of milk is best but too expensive; Extract of Malt has a marked sweetening power and renders milk palatable and will convert any starch present and is believed to render the curd in the stomach less dense and indigestible. It has many advantages and is suitable for common use. Cane sugar may also be used although not so digestible. It has the advantage of being the cheapest. The amount of sweetening matter to be added varies with the infant, and the degree of dilution, but for the first month the addition of half an ounce of sugar of milk or Malt Extract or three drams of cane sugar to each 15 ounces of milk prepared for use will be sufficient.

The dilution of milk renders the addition of some fatty material necessary. It is often advisable, however, to begin bottle feeding without the addition of any extra cream. If we use 7 ounces of milk diluted with twice its bulk of water we have to add one ounce of cream to the mixture to bring it up to the standard. Among the poorer classes fresh butter or cod liver oil may be substituted being cheaper.

The number of feeds in the 24 hours both in the case of bottle-fed and breast-fed infants may be arranged according to the age of infant and the times once fixed must be closely adhered to, the principle being that the interval between meals should be long enough to allow of complete digestion, and of emptying the stomach, and of a period of rest for the stomach. As a rule, during the first month feeding every two hours during a day of 12 hours (*i.e.*) from 7 A.M. till 7 P.M. and only two feeds one at 11 P.M. and the other at 3 A.M. during night of 12 hours should be

given. I cannot here too strongly condemn the habit of mothers making their suckling infants to sleep with them and nurse them right through the night whenever the baby cries. Medical men ought to invariably enquire in this direction and remedy the evil habit before treating a case. If the infant be asleep when feeding time comes, he should be awakened and fed. If he cries before time, he is not to be fed but an examination as to other cases of discomfort should be made. In hot weather a common cause of crying is thirst and not hunger.

Though the milk prepared in the above manner is fit to be used, I prefer the addition of Citrate of Soda as suggested by Wright, one or two grains of Citrate of Soda to each ounce of the mixture prepared for use. The curds formed in the stomach are believed to be rendered more digestible and the vital properties of milk are not injured.

TIME TABLE FOR INFANT FEEDING.

Age.	Interval by day.	Night feeds.	Quantity at each feed.
During 1st month.	2 hours.	2	1 to 1½ ounces.
" 2nd "	2-2½ "	2	2 to 3 "
" 3rd "	" "	1	3 to 4 "
" 4th "	2½-3 "	1	4 to 5 "
" 5th "	" "	1	4 to 5 "
" 6th "	3 "	Nil.	5 to 6 "
" 7-9th "	3 "	Nil.	6 to 7 "
" 9-12th "	3½-4 "	Nil.	7 to 8 "

The quantity here given is not absolute; to some extent it must be left to the baby's appetite; the best plan is to tell the mother to give the child as much as he will have at each feed.

The last point in artificial feeding is the kind of bottle to be used. The best bottle is one that is boat-shaped with an India-rubber teat but no long rubber tube. Allenbery's feeding bottle sold for Re. 1. is a good one. The bottle should be scalded after use and cleaned with a bottle brush which should be boiled before using. After each feed the nipple should be turned inside out and washed and kept with the bottle in a basin containing Boric lotion 5 grains to an ounce, in the interval. As an additional precautionary measure, during summer, printed papers containing instructions as given to all the mothers attending the Paddington Green Childrens' Hospital may be distributed translated in all the vernaculars, the most important of them modified according to the needs of this country are:—

"In hot wheather milk quickly turns sour or becomes tainted by dust,

dirt and flies and may easily bring on diarrhoea unless the following precautions are taken:—

1. Buy the milk twice a day and get the best cow's milk.
2. Boil it once for one or two minutes. Do not boil it till cream settles on top, as you are accustomed to do.
3. Then place it in a covered vessel in a basin of water to keep it cool. The milk must be covered to prevent dust and flies from reaching it.
4. Always taste the milk in a spoon before putting it in bottle, to see that it has not turned sour. Do not put the teat in your mouth.
5. Do not keep any milk left in the bottle for the infant's next meal. Use it for yourself or the rest of the family.
6. The bottle should be boat-shaped with an India-rubber teat with no long tubes.
7. The bottle should be scalded out after use and cleaned with a brush each time.
8. After each feed the nipple should be turned inside out and washed and kept with the bottle in cold water.
9. In any case of sudden diarrhoea or vomiting stop the milk at once and give only plain water or barley water and take the baby to a qualified doctor without delay and not to a quack or a Vythian. Do not think that diarrhoea will pass off, as the baby may be so ill in 24 hours that no treatment will be of any use.
10. Do not be afraid that the baby will starve if only plain water or barley water is given for a day or two. There is no danger in this.
11. Do not think when a baby cries or is sick that it wants more food.
12. Do not give rice before the child cuts the four incisors.
13. Do not give patent foods to infants without a doctor's advice.
14. Do not keep any "dummy" soothers in infant's mouth.
15. Do not keep the child naked. It is important to keep it clothed to protect it from chills.

Hygienic:—The child suffering from the disease should be kept in a well-ventilated room, warm in bed, isolated from other children. All clothes soiled by the excreta of the child should be thoroughly sterilised and particular care should be bestowed on the disinfection of stools.

Curative:—No one line of treatment can be laid down; each case must be studied and a searching investigation must be made as to cause and nature of the disease. If due to over-feeding in a breast-fed infant

the number of feeding times or the amount given at each meal should be diminished. In the case of bottle-fed babies every effort should be made to ascertain the cause; if due to rickets, it must be treated by appropriate remedies. In severe cases marked by vomiting and collapse special lines of treatment should be adopted, the watch-words being Starvation, Elimination and Evacuation.

Starvation:—We must starve the child because we do not wish to put in more pabulum for the micro-organisms to grow. Milk in any form should be stopped and efforts must be made to clear the gastro-intestinal tract. If the child does not improve, starvation may be carried on for 36 or even 48 hours remembering that children bear starvation very well only if they are kept warm and given water to drink. At the end of 48 hours, or if sufficient time has been allowed for the thorough evacuation of the gastro-intestinal tract, albumen water may be given; if the number of stools has diminished and the motions are not of a mucous character, a little nourishment in the shape of whey, and lastly the casein of milk which must be given gradually increased in quality and quantity as the condition improves. The chief points about the dietetic treatment are:—

1. "To give no food until the stomach can retain and digest it.
2. To begin with very weak foods and very small meals.
3. "To let the patient have as much water as he can retain."

Evacuation of the Gastro-intestinal tract.

Stomach and small intestines: When vomiting is present, washing out of the stomach is imperatively indicated and should be done at once. It is an exceedingly simple procedure in children and there should be no hesitation in employing it either with plain water or weak Condy's Fluid. For this purpose a small-sized red rubber œsophageal tube connected by means of a piece of glass tubing to another piece of soft rubber tube which is attached to a funnel or to the barrel part of a glass syringe from which the piston has been removed as recommended by Dr. Hutchinson is a simple and useful apparatus.

Before finally removing the tube after a thorough wash, half an ounce of castor oil may be introduced into the stomach with the object of evacuating the small intestines where the micro-organisms grow.

Large intestines: The washing out of the colon should be done if the diarrhoea is excessive and the colon is involved. It is better, if treatment is begun at both ends. This may be effected by means of a soft rubber catheter, No. 14, English, connected to a receiver which must be held about 2½ to 3 feet from the patient's body. The child must lie

on its back with the legs well drawn up and the hip raised. The well-oiled tip of the catheter is passed into the rectum and the water allowed to flow slowly in when two inches of the catheter have been introduced, as this facilitates the further introduction higher up. Irrigation must be carried on till the washings come away clear.

Elimination of poisons or toxins absorbed into the system may be effected by subcutaneous injection of saline about 8 or 10 ozs, at one spot into the loose tissues of the axilla or the abdominal wall.

The restorative effects of saline injections in collapse are marvellous. The benefit thus obtained may be kept up by small doses of brandy and strychnine.

For restlessness and the inelastic state of the skin I have described, it is advantageous to put the child on a hot pack, or a hot bath with or without mustard.

Medicinal Treatment.

Acids, alkalies, astringents and antiseptics have all been vaunted as specifics, and have given disappointing results. Intestinal antiseptics, as Salol, Soda Salicylas, Resorcin, etc., have been recommended and useful in the hands of some, while some authorities disclaim the efficacy of these drugs. There are four drugs which are trustworthy in the treatment of diarrhoea in children, *viz.*, Castor Oil, Calomel, Bismuth and Opium.

Castor Oil should always be given 3 or 4 drams at the onset of the disease giving place to Calomel, if not retained, with the object of evacuating the intestinal tract; subsequent action of bowels should be kept up by Castor Oil in the form of misturæol: Ricini B.P. ʒi every four hours for 4 or 5 days and afterwards less frequently.

Calomel should be given in fractional doses 1/6 grain combined with a grain of Bicarb: of Soda every hour until one grain has been taken and afterwards less frequently every two or three hours. This is useful especially if vomiting is present.

Bismuth in the form of Sub: nitrate gives good results when given in not less than 10 grain doses every 2 hours so that black stools are produced. To be effectual, Sulphide of Bismuth must be formed. The large doses of Bismuth are continued until the child can take milk and then in 5 grain doses until full milk diet is taken or constipation results.

Opium plays an important part in the treatment of diarrhoea but the only two preparations that can be given to infants under one year are Tinctura Camphoræ Co. and Pulv: Cretæ Arunaticus with Opio. Extreme

care should be used when the drug is given as children bear opium very badly. It is indicated, if the tongue is clean and the motions are offensive. It quiets down the peristalsis and so prevents putrefaction and diarrhoea. It may also be given if the stools are very frequent and accompanied by tenesmus.

It should on no account be given at the outset of the disease nor in collapse. A furred tongue is a contra-indication for its use.

Two practical points with regard to the use of opium are :—

- i. It should be given separately and not along with other drugs, Tinct Camphor Co. being the better of the two preparations.
- ii. A child should not be waked up to give a dose of opium, for fear of giving an extra dose if he be already in a drowsy state.

Dr. Hutchinson speaks very highly of Argenti Nitras in the treatment of diarrhoea and says he keeps it up his sleeves as his last card in treatment of infant diarrhoea. He recommends Argenti Nitras $\frac{1}{8}$ gr. Acid Nitric Dil m. i. Glycerine m. 5 and distilled water 2 drams. It may be given 3 or 4 times in the day when the motions are watery and offensive in the later phases of the illness.

To state briefly, the treatment in mild cases need not be carried out in all the details I have just described; after withholding the milk for a time extending from 8 to 24 hours according to the severity of the disease and substituting Barley water, Albumen water or plain water, the child should be given a dose of Castor Oil according to its age. In my practice I have invariably found mothers reluctant to give a dose of Castor Oil under the impression that the child will die by extra-purgation; should there be fever in addition, the position of the doctor is rendered much worse as there is a popular belief that it is dangerous to give Castor Oil in fevers. Should you desire to respect their wishes and also to save your reputation, I would advise the Calomel treatment in fractional doses in preference to other forms of purgation viz., Salins or Gregory's powder, the latter being too inconvenient and bulky, the former irritating. The next step after the bowels have been evacuated is to put the child in Mist: Ol: Ricini (3ii. 3i) in tea-spoonful doses for a day or two to keep up the action of bowels till the motions are less offensive and turn yellowish.

Now is the time to put the child on Bismuth either in the form of Sub Nitras or Salicylas, remembering the rule to give it in large doses. Should the motions be still watery and serve no purpose except to weaken the child, I recommend my plan of putting the child on Mist: Cretæ

in combination with Bismuth or alone which by its mechanical action serves to harden the faecal matter.

Before concluding I wish to say a word or two about the so many artificial foods that one finds in the market and what ought to be the attitude of the profession towards it. They may be classified under three groups; No. I group consisting of Allenbury's Nos. 1 & 2 and Horlick's malted milk intended to be a complete substitute for milk.

No. II. Mellins Food—a completely malted food and all Carbohydrates being in a soluble form.

Benger's food-compound of wheat flour and pancreatic extract. These foods are intended to be prepared with milk, the artificial part having been predigested.

No. III. Containing unaltered starch. These are sometimes used by some, when natural food is temporarily suspended. For my own part I never use it either in the treatment of infantile diarrhoea or in artificial feeding of infants nor do I recommend it.

In conclusion, if there is one point more than another that I wish to bring to special notice, is the fact that **the better and the more intelligent way** the children are cared for and brought up, the less is the mortality of infants as evidenced by the death rate of infants of various classes in the classical Prussian town of Erfut shown by Dr. Von Med: Kurt Jester; there 30.5% of infants born to parents of working classes die during the 1st year, 17.3% among middle classes and only 8% of those in better classes of society.

The second point I wish to lay stress upon is the point played by the house fly in the production of infantile diarrhoea by infection. Since writing the above the following has appeared in the home telegrams of the *Madras Mail* dated Friday the 29th October 1909. "The Local Government Board has issued a report by Prof. Nuthall F. R. S. to the effect that house flies are carriers of Cholera, Typhoid, Infantile Diarrhoea and Dysentery and should receive the serious attention of sanitary authorities."

Our Contemporaries.

MEDICINE.

Orchitis due to Mumps without Salivary Gland Swelling.

The importance of remembering that orchitis may be due to mumps is considerable, particularly in young men in whom otherwise the gonococcus may sometimes be put down too readily as the cause of the

mischief. Mumps is a general, specific, infectious disease comparable to the exanthemata, and its commonest local manifestation is the painful swelling of various glands. So constantly are the salivary glands, particularly the parotid glands, inflamed and enlarged that one is a little apt to forget that mumps may occur without any salivary gland affection at all, and that painful swelling of the testes may be its only manifestation in young adolescent males.

The chronological relation between the parotid and the testicular manifestations of the disease is variable. Parotitis usually precedes orchitis by one or more days; exceptionally parotid inflammation follows orchitis instead of preceding it; and there are rarer cases still in which tumefaction of the salivary glands is entirely absent, and orchitis may then be the sole manifestation of the disease.

The following is an instance in point. An acute orchitis occurred in a boy of 15; the cause of the orchitis was not obvious, but the nature of the case was cleared up by the development in each of the patient's two sisters, 15 days and 23 days later respectively, of the typical parotid inflammation of mumps. The boy in question was seized suddenly on April 20 with a violent headache and repeated vomiting. When seen by his doctor shortly afterwards, so little could be found to account for his symptoms that no better diagnosis than gastric fever could be suggested. From April 20 to April 23 his condition remained about the same, except that a purgative had been followed by a return of appetite and a diminution of the fever. On April 24, four days after the onset of the illness, the lad on rising in the morning felt that his right testicle was slightly painful. The next day—April 25—it had become very painful and it had swollen, and the skin over it was red and œdematous, so that the patient was obliged to stay in bed.

He was very carefully examined by a surgeon who, finding that the epididymis was even more affected than the testes, and that nowhere, either in the urethra or elsewhere, was there any obvious cause for this trouble, debated whether it might not be an example of acute tuberculous epididymo-orchitis. At this time the temperature had risen to 104° F., which was the highest it had yet attained.

On April 27 a more careful inquiry into the history elicited the fact that on April 10, which was the last day the boy had been at school before the break-up for the holidays, and 10 days before the onset of the illness, three schoolmates had been laid up with mumps. This seemed to throw considerable light upon the case. Under treatment by means of rest and fomentations the orchitis rapidly decreased and it was

perfectly cured by May 2. If there had been the least doubt as to the orchitis in this case being due to mumps, this doubt was entirely removed on May 5, that is to say, 15 days after the boy had been taken ill, when his elder sister, aged 16, developed great swelling of the right parotid gland which was very painful, the swelling next day having also extended to the left. Her condition was undoubtedly that of mumps, which she in all probability caught from her brother. A younger sister aged 11, also developed the typical symptoms of mumps on May 13.—*The Hospital.*

Kala Azar.

The treatment of Kala Azar has up to the present been a very hopeless one, but the apparent cure of a case after treatment by atoxyl raised everyone's hopes that perhaps an agent with curative effects for this disease had been found. Whether this be so or not remains to be seen, but a report on "Two Cases of Kala Azar Treated by the Arylarsonates," by Major HARRISON and Captain CUMMING, in the February number of the *Journal of the Royal Army Medical Corps*, tends to show that at any rate in some cases these drugs appear to be useless. Two soldiers from India were very thoroughly treated by the authors just mentioned, but the downward progress of the disease was not retarded in any way, death eventually taking place in much the same manner as usual in these cases. In the second case, however, an almost complete absence of parasites was found at the autopsy, and this may have been a result of the drug. It is just possible that if the arylarsonate treatment had been begun earlier better results might have been obtained from it, but until this has been done it is premature to speculate. Senega was tried when the patients were almost *in extremis*, the use of this drug having been suggested to the authors by Sir WILLIAM LEISHMAN, who stated that Captain ENSOR had had some promising results from it in the treatment of this disease.—*Ibid.*

Prandial Diarrhœa.

DR. LINOSSIER, of Vichy, has recently called attention to a peculiar variety of diarrhœa which he calls "prandial," because it is almost invariably observed at, or soon after, meals.

This diarrhœa is ushered in without any premonitory symptom on the right of the epigastric hollow, by sudden pain, which may be quite severe. It radiates in the direction of the umbilicus or thorax and is associated with a feeling of extreme distress, with pallor, cold sweats and a feeling of faintness. The pain, as a rule, only lasts a few minutes and

is followed by severe colic and an imperious call to evacuate the bowels, the motion being liquid and consisting largely of bile. Thereupon the trouble is at an end and the patient is able to resume his meal.

This prandial diarrhoea may only recur at long intervals, but in some instances it recurs after every meal, to the very great discomfort of the patient. Diarrhoea may be the only symptom, pain being absent, while in others there is pain and no diarrhoea.

The affection is met with exclusively in "livery" subjects, whose nervous system is highly strung and whose gall-bladder is abnormally sensitive.

The author explains its occurrence in the following way: Under ordinary circumstances the bile begins to pour into the duodenum as soon as food enters the stomach and continues throughout the process of digestion. In bilious subjects, under the influence of the gastro-intestinal reflex, the evacuation of bile takes place suddenly, and as these patients are almost always choleemics, the sudden discharge of a large quantity of bile into the intestine sets up violent peristalsis and determines an irresistible action of the bowels. The pain, however, may be due to violent contraction of the gall-bladder or possibly to the passage of a gall-stone.

Prandial diarrhoea does not appear to threaten life, but it constitutes a most troublesome infirmity. It is fairly common in the form of more or less irregular attacks, but is rare as a daily occurrence. It is more frequent at the midday than at the evening meal.

By way of treatment the author recommends the administration of opium and belladonna in order to lessen the sensitiveness of the gastro-intestinal reflex, to be given a quarter of an hour before the meal, with, on the other hand, a lacto-vegetarian diet, Vichy water, moderate exercise and a quiet life, avoiding every source of fatigue.

These patients will usually be found to be suffering from more or less pronounced digestive troubles to which is due the excitability of the gastro-intestinal reflex. A lacto-vegetarian diet often suffices to attenuate the symptoms, but it is not to be relied upon. Digestion is laboured and there is alimentary stasis, which allows of putrefactive changes in the intestinal contents, with the formation of toxins and irritation of the whole tract. Such patients should be given two or three compressed Lactobacilline tablets with meals, the diet meanwhile being mainly lacto-vegetarian. The effect of this treatment is to prevent putrefactive and other abnormal fermentations, and within a few days the nervous hyper-excitability subsides and the symptoms gradually mend. The treatment,

however, requires to be maintained for some weeks, the dietary being gradually enlarged until an ordinary mixed diet is reached.—*The Journal of Practical Dietetics and Bacterio Therapeutics.*

Typhoid Fever, Rupture of Spleen in.

Enlargement of the spleen to some degree is constantly associated with typhoid fever, and splenic rupture occurs more frequently than is clinically recognized. Many cases of lineal rupture have gone to death undiagnosed. Many such cases have been diagnosed perforation, and, because of medical prejudice, have been denied surgical help. It occurs most frequently in the beginning of the third week, and then during the actual stage of convalescence. This latter is probably explained by muscular effort. Any reference to pain on the part of the patient, under the left costal arch, should put the attendant on his guard. The normal spleen cannot be palpated satisfactorily, and does not have to assume great dimensions for spontaneous rupture. The enlarged typhoid spleen should never be handled, but should be touched daily. The marks upon the skin, with the date at the end of the line, would indicate the increase in size.

In all cases of typhoid, an ice-bag should be constantly applied to the spleen. In cases of enlargement the patient should be bathed most gently and carefully. A sudden increase in the pulse-rate, 20 or 30 beats, at any time during the course of this disease, should be investigated thoroughly. If this increased pulse-rate is attended by evidence of shock (hæmorrhage), the attendant should be notified instantly. If the liver dulness is not obscured and a rapidly rising temperature soon sets in, rupture of the spleen is the tentative diagnosis. Pain is an insignificant diagnostic sign of rupture. On diagnosis, infusion and Fowler's position should be instituted, immediately before operating. The use of adrenalin, ergot, and iron preparations would seem to be of little value. The only hope for recovery is in operation. In the course of operation for intestinal perforation, the spleen should be gently palpated through the abdominal incision and, if like a bag of molasses, should be removed.

All the grave complications of typhoid fever are essentially surgical. A typhoid state is no contraindication for operation. Aspiration of the pus tumor can be carried out. Continuous peritoneal lavage with normal salt solution by means of two glass tubes, the giving one in the upper end of the incision (subdiaphragmatic) and the receiving tube a suprapubic stab, should be employed after removal of the organ. Roentgenography may be employed in suspected cases.—*The Monthly Cyclopædia and Medical Bulletin.*

Practical Advice in the Treatment of Irritable Lunatics.

By Dr. E. REISS, Clinic for Mental and Nervous Diseases at the University of Tübingen.—As regards the powdered hypnotics, Veronal and its sodium salt Medinal hold a pre-eminent position. They are best given in doses of 0.5 to 1 grm. in wafers, on an empty stomach, mixed with large quantities of liquid; otherwise resorption might take place slowly and irregularly, and delay the effect, which may thus extend to the next morning instead of during the night. Of these two hypnotics, preference should be given to Medinal, on account of its easy solubility. It can be administered to patients who refuse to take it per os or as clysmata without any difficulty when dissolved in 10 to 20 c.cm. of water and mixed with a little amylum.—*The Therapist*.

Ethyl Chlorid as an Anæsthetic.

Dr. SILL, in the *Medical Record*, extols the merits of Ethyl Chlorid, in which we have a comparatively safe and reliable general anæsthetic, which is most suited for operations for the removal of adenoids and tonsils in children. The anæsthetic is simple of administration and does not require an expert or one of large experience to give it. The patient is under the influence quickly, is out almost immediately upon completion of the operation; there are no unpleasant or dangerous effects from its use either during or after the operation. The anæsthetic is not only especially applicable in operations in the throat, but should be used in most of the other operations performed upon children. When the inhaler is kept over the patient's nose and mouth he can be kept under the anæsthetic as long as desired. It is only when that is removed that the patient regains consciousness more quickly than with other anæsthetics. Where long operations are necessary on the nose or throat he advises first putting the patient under Ethyl Chlorid and then continuing deep anæsthesia with ether, using the drop method.—*The Monthly Cyclopædia and Medical Bulletin*.

Treatment of Mucous Colitis.

KOEHLER gives the following conclusions regarding the treatment of mucous colitis:—1. We must eliminate in, as far as possible, any known cause. 2. We must use the best possible means of overcoming stasis of the bowel, and procure, if possible, normal evacuation of its contents. 3. We must use necessary means to restore and improve the natural tone of the mucous membrane and muscular coats of the intestine. Generally speaking, the large intestine should be

thoroughly washed out once a day, so as to effectually remove all mucous from the colon. To do this, at least two quarts of water should be used, and the patient should assume the knee-chest or a modified Sims' position. By allowing the water to flow very gradually and by having it at about the temperature of the body, all straining is avoided, and patients quickly learn to hold a quart or even two quarts of water, and to retain it for many minutes. As a rule a considerable quantity of mucous comes away with the water. The best time to give the enema is in the forenoon, about 11 o'clock, for by that time the bowels will usually have moved, and the action of the water upon the empty intestine will be more beneficial. Drugs are of little value. Iron, arsenic and strychnine should be given for the anæmic, and sometimes antiseptics, such as creosote and bismuth salicylate, are useful to allay intestinal fermentation. As regards diet, different views are entertained. Some believe in the protection of the intestine as much as possible, advocating the simplest non-irritating diet—one that leaves the smallest residue. Others, such as VON NOORDEN, HENNICKER and BOAS, do not consider the starvation diet rational; indeed VON NOORDEN urges the use of a diet that is very coarse and containing much cellulose, and fruits with small seeds and thick skins, like currants, gooseberries and grapes. He maintains that action of the bowels must be rendered normal, not only for the time of the cure but for all time. With this object in view, he suggests the use of a coarse diet as above outlined for several weeks. Regulation of the bowel leads to a rapid cure in many cases of mucous colitis. The author thinks that it is best, as a rule, to urge abundant and nutritious diet, without, however, insisting that the patient eat substances that are too coarse, and he thinks it also advisable to divide up the meals so that five or six meals are taken daily. Next to abundant nourishment the methodical oil cure is of great value. The oil should be used every other night in half-pint doses, and should be retained in the bowel overnight. This, if persevered in, favourably influences the constipation and also effects a diminution or actual disappearance of the mucous discharges. If these measures fail, after careful and persistent use, then and then only should the question of surgical intervention be raised.—*The Australasian Medical Gazette*.

Intestinal Perforation in an Ambulatory case of Typhoid Fever—Recovery.

BY

H. GERALD LOUGHRAN, M.B., B.S. (MELB.),

Brighton, Victoria.

G.C., æt. 21, furnace hand at smelters, consulted me on Thursday, August 21st, 1909. He had felt quite well and had been at work up

till preceding Monday, when he had a headache. He now complained of "headache" and felt "sick all over." Temperature 99, pulse 82. Sent in to hospital, the diagnosis being either dengue or *incipient* typhoid.

The following day the temperature was 100.2, the next day it was 99.4, next day normal. Two days later he was discharged at his own request with a temperature of 97.8 and a pulse of 60. (August 26th). He had had no spots and no enlargement of spleen, and said he only felt sick on two days.

On August 27th he states that he felt well, ate a hearty breakfast and lunch, and signified his intention of going to work on "afternoon shift."

At 2-30 p.m., he was seized with intense pain on the right side of the abdomen, below the umbilicus. My colleague, Dr. LOONEY, saw him at 4 p.m., when he was in a collapsed condition, and sent him to hospital after giving him $\frac{1}{8}$ gr. morphia hypodermically. On admission at 5 p.m. his temperature was 102.4, pulse 130, respiration 24.

At 8 p.m. when I saw him in company with Dr. LOONEY, his temperature was 102.8, pulse 120; pain not so severe. He lay on the right side with his knees drawn up; the right side of the abdomen was rigid and extremely tender. We thought him to be an acute case of appendicitis, but as his expression was better than when Dr. LOONEY had seen him and his pulse was improving, we decided to wait till morning.

No suspicion of typhoid crossed our minds, and in fact there was nothing in the history to suggest it.

At 10 a.m. the following morning (28-8-09) his temperature was 101, pulse 100. His facies looked worse than on the preceding day, and there was some dulness in the right flank.

At 11 a.m. Dr. LOONEY administered chloroform, and I opened the abdomen by the usual incision for the appendix. On incising the peritoneum, which appeared thickened and unduly vascular, a gush of faecal fluid took place, containing some semisolid particles. So faecal was this fluid that I thought at first I had opened an adherent coil of bowel, but was soon able to satisfy myself that the peritoneal cavity was full of this feculent material. As much as possible was allowed to run out, and swabbed out, and then the appendix was sought for. The caecum was reddened and flaked with lymph, but the appendix was healthy and not adherent to anything. The lower portion of the ileum was now pulled out, and in the first coil which escaped was a perforation of the diameter of a lead pencil, from which a particle of undigested food was protruding. The peritoneal coat of the bowel was red and cracked and flaked with

lymph. The perforation was surrounded by a continuous Lembert's suture, which seemed inclined to cut through the friable bowel. As much fluid as possible was swabbed out of the peritoneum, the bowel returned, and a large drainage tube inserted into the wound, which was partially sutured. A second incision was made above the pubes, and more faecal fluid escaped. This was swabbed out with sponges on holders and a large drain tube was passed down to the bottom of the pelvis.

The patient was put to bed in Fowler's position, and a continuous enema of saline given per rectum. Temperature at 8 p.m. 102, pulse 108; has vomited at intervals, and, with straining, a good deal of dark green fluid. During the night he retained about 4 pints of saline, slept half an hour, vomited dark green fluid at frequent intervals, and passed 26 oz. of urine.

29-8-09.—Temperature at 8 a.m. 100, pulse 100; temperature at 8 p.m. 100, pulse 92, has vomited a good deal during the day; only retained about 15 oz. saline. Given calomel gr. 3 in six half-hourly doses; slept about an hour during the night.

30-8-09, at 8 a.m.—Temperature 98°, pulse 84; bowels have acted; wounds discharging freely a light brownish fluid. Saline discontinued.

1-9-09.—Faeces are coming through tube above pubes. Temperature 98°, pulse 88.

2-9-09.—Tube removed from wound in appendical region, and gauge packing used.

12-9-09.—Faeces still coming through tube in mid line. Tube shortened so as to just pierce abdominal wall.

17-9-09.—Tube left out of faecal fistula. Bowels acting daily after enemata.

30-9-09.—Complaining of abdominal pain. Very little faecal matter coming through fistula. A tumour present above and to right of umbilicus, hard on palpation and dull on percussion, but not tender. Bowels rather constipated.

Given large doses of castor oil and mag. sulph. for next three days with little effect on bowels. On October 4th a high enema of olive oil and soapsuds brought away an enormous stool containing some scybalæ. This was repeated on the following day with a like result. The tumour then gradually disappeared, the bowels acting freely with aperients, and he has since been free from pain.

7-10-09.—Faeces appeared in fistula for last time.

9-10-09.—Allowed up.

Nov. 1st, 1909.—Both wounds healed; patient walking about feeling comfortable.—*The Australasian Medical Gazette*.

SURGERY.

Varicocele.

BY

D'ARCY POWER, F.R.C.S.,

Surgeon to St. Bartholomew's Hospital.

When you have to do the operation, just remember some details about it. First of all, you prepare the patient in such a way that no irritation of the skin is caused; you must bear in mind all the time that the skin here is very delicate, and you must not set up eczema or dermatitis by your preliminary treatment. I would rather the patient were washed on the operating table with ether soap and biniodide lotion, and at once proceed to operate, rather than prepare the skin overnight, and pack him up, with the subsequent risk of chafing. You want a good assistant, who would devote himself to nothing except keeping the vas deferens away from the vessels which you are going to tie. He has enough to do if he holds the scrotum up with the index fingers and thumbs of his two hands, and is sure he has got the pampiniform plexus just underneath the skin, and that the vas is below his fingers. He makes the skin quite tense, and when he has done that, you incise between the two fingers, *i.e.*, $1\frac{1}{2}$ inches. Cut down through skin, and then through fascia, three or four or five layers, as the case may be, until you come down to the veins themselves. The mistake is to try to pass the needle under the pampiniform plexus before you come down to it. This plexus lies in several layers of fascia, and you must divide each if you are going to get the best results; go right down until the veins shine out as black things; and even then there is another layer of fascia which you can divide. So the essence of the operation is freeing and seeing the pampiniform plexus. And do not let your assistant move his fingers, otherwise the vas deferens will slip up, and you will almost certainly tie the vas with the veins. Remember that the veins lie packed together in little packets. Take an aneurysm needle, pass it beneath the packet of veins which you have freed. It is a proof that you have freed them sufficiently if you have to use no force to pass your aneurysm needle. If the needle will not pass freely underneath the veins, or if you have to cut down upon the end of it you have not divided all your fascia. Better it is to take your needle out again, take up your scalpel and forceps again, and go on cutting through the fascia until you can pass your needle readily, than to force the aneurysm needle through tough fascia. When you pass your needle under the veins, you should be able to move it to-and-fro at least an inch, so that there is an inch of that plexus exposed in the wound. Pass a double ligature through the eye of the needle,

withdraw your needle—and your ligature will be of catgut for choice; then tie the pampiniform plexus in two places, where you have freed it, that is to say, an inch apart. The parts are many, and you must get your knot tied into the veins, slowly, evenly and securely. When you have the ligatures tied, put a pair of pressure forceps above and below each. It happens to even the best of us that when we think we have securely tied a ligature, it slips off; therefore you must have your pressure forceps to pull upon the ends if this accident should happen. Cut out a piece of the veins between the two ligatures, generally about half an inch. You want to leave a fair piece of vein between the end of the ligature and the point where you divide; otherwise the ligature will certainly come off, and if it does, it is a disaster, as far as that particular case is concerned. There is certain to be much bleeding from the ends of the veins. A good varicocele operation is bloodless from beginning to end, and that is a very important factor in the subsequent repair. If you are at all careless or rough you are certain to have a hæmatoma. You have two ends of divided veins and the first thing which strikes you when you divide them is: "I have certainly got that vas after all." But it is not. When you look at the veins they are so thickened, and the walls are so thick that unless you cut sections and microscope them, you cannot tell the vas from veins. These thickened veins nearly always stand out. Take the two ends of the catgut ligature, and tie them together, so that you bring the ends of the veins into apposition. There must be a lump; you cannot help it. It is of no use trying to get them into exact apposition. Then bring the skin edges of the wound together; you need not trouble about the fasciæ, and be very careful that the skin edges are not turned in. The proper way to get them into apposition is for your assistant to let go the scrotum which he has been holding all this time, put a blunt hook on either side, and pull the ends tight. Then you can easily sew the edges. It is better not to use a continuous suture, use three or four interrupted sutures of fine catgut. If you get everything quite dry the subsequent dressing should be collodion and wool. In about seven or eight days' time the patient can go out; there is no reason to keep him in bed after taking the stitches out.—*The Canadian Practitioner and Review.*

Appendicitis with Normal Temperature and Normal Pulse: Report of a Case.

BY

HERMANN B. GESSNER, M.D., New Orleans.

The combination of elevated temperature and quickened pulse is regarded by many as an essential item in the clinical picture of an early

appendicitis. The normal temperature of a well circumscribed abscess and the normal or subnormal temperature of a virulent infection against which the organism is powerless to react—the latter associated with a quick, weak pulse—are recognized clinical facts. That the stage of invasion may also have an afebrile character is not so well known. For this reason the following case is deemed of sufficient interest to be here reported:

Frank C., colored, male, aged twenty-seven years, railroad employee, was admitted to Charity Hospital on September 25th 1909, suffering from a compound comminuted fracture of both bones of the right leg. The course of this injury was uneventful.

On Sunday evening, October 24, he began suffering with abdominal pain, accompanied by vomiting. On Monday this pain was still present, also the vomiting; the bowels being inactive, magnesium sulphate was administered in two one-half ounce doses, and three soap-suds enemata were given, all without result.

On Tuesday the writer's attention was called to the case, the picture of which may be summed up briefly as follows: Abdominal pain, vomiting, obstinate constipation for thirty-six hours, tenderness over appendix, abdomen rigid, especially as to the right rectus; temperature normal, pulse 72. The other features appearing to outweigh the normal temperature and pulse, the patient was at once prepared and operated on. A long, thick, angry-looking appendix was found, pointing its tip over the brim into the pelvis. Adhesions were broken up gently and the appendix removed, using the cuff method of treating the stump because of its thickness. Recovery was uneventful.

The giving of salts is mentioned only to be condemned, as an enema will usually accomplish the same purpose as efficiently and far more safely.

The absence of febrile temperature and pulse elevation might be explained by the thickness of the tube wall but for the surface injection and the fresh adhesions above mentioned.—*The International Journal of Surgery.*

The General Practitioner as Anæsthetist.

By

J. ALLAN, M.D.

The administration of anæsthetics is in some quarters looked upon as work for a specialist, but there is no reason why it should not be legitimately done by the general practitioner. The duty of giving anæsthetic cannot however, be lightly undertaken, and the public have a right to demand

that those who give anæsthetics should have had adequate training in this branch of medicine.

CHOICE OF AN ANÆSTHETIC.

For major operative work, where prolonged anæsthesia is required the choice naturally rests with chloroform or ether or a mixture of these. For several reasons chloroform has been the choice of the majority of practitioners. Perhaps the chief reasons are that chloroform can be so easily carried about and that it can be so easily administered. Ether has never been so much favoured by the man in general practice, probably owing to the greater difficulty of transport of the Clover's apparatus and because of the supposed greater trouble in administering it. There is now a general consensus of opinion in favour of the exhibition of ether by the open method, but the difficulty is that large quantities are used, the mask becomes saturated, and, unless great care is exercised, the ether may get on to the patient's face. This last risk may to a certain extent be obviated by employing three or four layers of lint or flannel in the construction of the mask and by interposing between the face and the edge of the mask a layer of wool or gauze. A mixture of chloroform and ether in the proportion of one of chloroform to two of ether ($C_1 E_2$) or two of chloroform to three of ether ($C_2 E_3$), is an excellent and efficient anæsthetic and is certainly much safer than pure chloroform. As a routine general anæsthetic this mixture is about as good as any. As regards fatality, ether is undoubtedly less dangerous than chloroform, but it is more disagreeable to take and the after effects are likely to be more marked. It is more liable to be followed by pulmonary complications and its exhibition is contra-indicated in patients suffering from bronchitis, etc. For this reason it is not an ideal anæsthetic for old people who are the subjects of chronic bronchitis. It may be incidentally mentioned that many of these old people take and bear chloroform very well indeed. Ether, when administered with freer admixture with air, is not so liable to cause severe after effects or to be followed by lung complications. For minor surgical work ethyl chloride can be used, but it is only suitable for operations which can be accomplished in a few minutes. As a preliminary anæsthetising agent, prior to the exhibition of chloroform or ether, it is excellent. It must not, however, be recklessly administered, because as regards fatality it is intermediate between chloroform and ether, and it therefore cannot be called a safe anæsthetic. It would appear that it cannot be given without risk to a patient in the sitting posture, for example, for teeth extractions in a dentist's chair. Nitrous oxide is the best anæsthetic to use for minor dental work and, it can also be employed in simple surgical operations as in opening abscesses, incising whitlows, etc., where anæsthesia of short duration is only necessary.

ANÆSTHETIST'S ARMAMENTARIUM.

There are certain things which should always be at hand when an anæsthetic is given, no matter how simple the case may be. These necessary items are tongue forceps mouth gag, hypodermic stimulant, and perhaps a mask. Of course, the anæsthetic might be given by means of a towel or piece of lint, but my own experience is that it can be more easily and more satisfactorily given on a mask. No anæsthetic case should be undertaken unless a hypodermic syringe in working order and charged with strychnine is at hand. It takes time to fill a hypodermic syringe, and the prompt injection of strychnine may avert a fatal syncope. It is always a wise precaution to be prepared for emergencies. While the things just mentioned may be taken as the minimum with which an anæsthetist should work, he will prefer to have a better stocked table beside him. In addition to the above, he will probably desire one or two towels, a basin, an extra hypodermic syringe, a minim measure-glass, amyl nitrite capsules, brandy, solution of strong ammonia, throat sponges, etc.

SOME PRACTICAL POINTS.

The patient should be properly prepared; that is to say, the bowels should have been thoroughly moved and no food taken for some hours prior to the exhibition of the anæsthetic. These precautions diminish the risk of accidents during anæsthetisation and tend to minimise after effects. The condition of the various organs, heart, lungs, kidneys, should always be previously carefully investigated. For instance, a child suffering from several boils is put under a general anæsthetic to allow these being treated surgically. The child afterwards sinks into a fatal coma, and it is then discovered too late that there is sugar in the urine. The anæsthetic should be given slowly and continuously by constantly dropping it on to the mask from a special bottle. The mask should not be saturated with the anæsthetic and then placed tightly down on the patient's face. Once surgical anæsthesia is established this condition is best maintained by frequently dropping a little of the anæsthetic on to the mask. When struggling the patient should not be forcibly held down. It is better to simply guide the patient's movements so that he does not harm himself or other people. During this stage the anæsthetic should be given well diluted. Nothing is more calculated to risk the patient taking an overdose than the holding of the mask saturated with the anæsthetic close to the patient's face during the time he is struggling. Speaking generally, one may say that surgical anæsthesia is indicated by muscular relaxation, regular breathing, contracted pupils and absence of corneal reflex. All four may not be present, and it is quite possible to

have perfect anæsthesia without the abolition of the corneal reflex. In conclusion, it may be said that the practitioner who undertakes to give the anæsthetic for a major operation should realise that his duty is to attend to the administration of the anæsthetic, to watch carefully the effect on the patient.—*The Hospital*.

Skin Grafting on Large Surfaces.

Dr. E. K. MACOMBER gives the salient points of his technic as follows:

1. Do not graft till the surface is well granulated and healing has begun.
2. Take skin from person to be grafted when possible.
3. Use silver nitrate the day before to prepare the field instead of shaving or scraping the granulated surface at the time.
4. Wash with salt solution and wipe dry with sterile gauze before placing grafts.
5. Place grafts around the edge near the skin border, laying them directly from the razor without immersing them.
6. Lay grafts smoothly and press out all air bubbles.
7. Cover grafted area with a single layer of gauze, which leave in place for a week. Cover this with a thick pad of gauze wet with salt solution, then a layer of absorbent cotton, then a firm roller bandage.
8. Remove all dressings, except single layer, daily. Cleanse with salt solution and apply fresh dressings as before.—*The International Journal of Surgery*.

Stricture of the Male Urethra.

BY.

E. O. SMITH, M.D.,

*Professor of Genito-Urinary Surgery, Ohio-Miami Medical College;
Genito-Urinary Surgeon, Good Samaritan Hospital, Cincinnati.*

Stricture of the urethra is an abnormal narrowing of some part of that channel which interferes with the free outflow of urine, due to either muscular spasm or to organic changes in the walls of the urethra.

Abnormal narrowing of the external meatus should be divided very carefully. If cut too widely, the patient will be left without projectile force.

Spasmodic contraction of the urethra is usually due to acid urine, sexual excesses, fissure of the anus, hæmorrhoids, pinworms, cantharides, turpentine, etc.

Strictures following traumatism are much more stubborn to yield to treatment and the band of scar tissue may have to be dissected out through an external incision.

The popular idea that a rapid cure of gonorrhœa causes stricture is not based on facts, but on the contrary, the longer the duration of the gonorrhœal inflammation the more liable is the patient to have a

stricture. In fact, it is the exception for an urethra to become absolutely normal after one prolonged attack of specific urethritis. The urethra behind the constricting band becomes dilated; a pouch is formed which is a most excellent container and incubator for the germs of sepsis, which may lead to periurethral abscess and possibly urethral fistula. All this argues for an early treatment of stricture.

Stricture is suspected when there is gleet, frequent micturition, with a tardy beginning of the stream, dribbling after urination, with possibly some hypogastric pain.

In examining for stricture great care and gentleness must be practised, otherwise a false passage may be produced.

Treatment is both general and local. The diet should be bland and not stimulating; alcohol and tobacco are to be excluded; sexual excesses to be avoided, also exposures to cold and wet.

Local treatment consists in gradual dilation. Begin with the largest sound or bougie that can be easily passed. This may be only a filiform. Gradually increase the size of the sound used. Treatments should be given every four or five days in the beginning, always being surgically clean with one's hands and instruments.

Urethral chill and shock can usually be prevented by giving the patient ten grains of quinine and five drops of tincture of aconite about twenty minutes before the treatment.

Epididymitis may, but seldom does, follow the passage of a sound.

Strictures that do not yield to the gradual dilation treatment are the exception. Internal urethrotomy should not be attempted except by those skilled in genitourinary surgery, as there is a possibility of doing great damage.

External urethrotomy is seldom necessary in the treatment of strictures other than those due to traumatism.—*International Journal of Surgery*.

OBSTETRICS AND GYNÆCOLOGY.

What Women should know in Regard to Uterine Cancer.

BY

J. H. CARSTENS, M.D., Detroit, Mich.

I have suggested that the medical profession agitate this point in the lay press, and on every occasion talk about cancer. Take our calendar, and the different days of the year are named after some supposed great saints (and most of them were great sinners); it seems to me a great deal better to name one day of the year "Cancer Day," and have every-body talk about cancer; have the lay press full of cancer articles

on that day; the preachers in their sermons should talk about cancer; the doctor should talk about it—then we can hope to arouse the public, and especially the medical men, to think of this great menace.

I have suggested to the Michigan State Board of Health that they get up a circular, which should be in the hands of every woman in the cancer period of life. These circulars should be in possession of county societies, and of every physician. I have suggested something like this:

The change of life or menopause comes on gradually, rarely suddenly. It is not preceded by excessive flowing or discharge or pain in a healthy woman.

By cancer period is understood those years after forty, although rarely it may occur earlier.

The first symptoms of cancer are:

1. Profuse flowing, even if only a day more than usual. Flowing or spotting during the interval or after the use of a syringe or a movement of the bowels.

2. Whites or leucorrhea, if not existing previously. If existing, but becoming more profuse, watery, irritating, or producing itching, it is a very suspicious symptom.

3. Loss of weight, if no other cause is apparent. Pain in the region of the womb, back or side.

If any of the above symptoms occur after the age of thirty-five or forty, a woman should seek prompt relief and *insist on thorough investigation of the cause* and prompt treatment.

Cancer is always at first a local disease, and can be removed if early recognized, and an absolute permanent cure brought about.—*International Journal of Surgery*.

Dysmenorrhea.

BY

AUGUSTIN H. GOELET M.D., New York,

*Professor of Diseases of Women, New York School of Clinical Medicine,
Visiting Gynecologist to the West Side German Dispensary and
Hospital, Etc.*

Dysmenorrhea (painful menstruation) is one of the most important symptoms of which women complain, important from her standpoint because its anticipation every month is often a nightmare, and when the pain is severe it incapacitates her for her usual duties, frequently confining her to bed—important also, because when neglected it often leads to serious disease of the pelvic organs, or it may indicate the existence already of serious disease that requires immediate attention. As a rule,

too little attention is given to this condition by writers of works on diseases of women because it is only a symptom; hence the physician who is called upon to deal with it has very little to guide him either concerning its numerous causes or the means of affording permanent relief, and he is prone to regard it with indifference or employs only palliative measures for the relief of pain.

Undoubtedly, persistent, severe dysmenorrhea indicates something out of the ordinary, something more than simple congestion or spasm, and it deserves more consideration than is usually accorded it. That it is, in the beginning at least, often caused by mechanical obstruction in the cervical canal is in a measure true, though it may be difficult to demonstrate this when the patient is examined, during the interval between menstrual periods, because the obstruction may be due to spasm or swelling (infiltration) of the mucous membrane which disappears with the congestion coincident with menstruation. However, when the obstruction, which invariably occurs at the internal os, is caused by induration of the structure at that part of the canal it is quite demonstrable at all times, as there is an exaggerated sensibility that is distinctly manifested when anything passes this point.

Whether this obstruction is the sole cause of the pain during menstruation in these cases, or there is something back of this condition producing it, is not always easily determined. I am inclined to believe that spasm of the uterus with contraction and narrowing of the cervix is most frequently the direct source of the pain in the majority of instances. But the question is to determine what produces this. Is this obstruction a cause or result of the condition producing the dysmenorrhea?

There are two principal types of dysmenorrhea that are most important, *viz.*, one when the menstrual flow is scant and insufficient, and the other when the flow is too free or profuse.

When the flow is scanty it usually signifies imperfect development of the ovaries or uterus, or both, or it may be a condition of atrophy if it occurs later in life after the flow has been normal. Then again it may be caused by displacements especially flexions of the uterus, growths, or tumors that, by pressure or displacement of the pelvic organs, interfere with the blood supply to the uterus and ovaries. I once observed this condition in a patient who had a dermoid cyst of one ovary that developed between the uterus and bladder, crowding the uterus back into the hollow of the sacrum. After its removal menstruation was freer and was attended with much less pain. Anemia, impaired general nutrition, sedentary habits, an indolent life, unhealthy surroundings, excessive

development of fat, all induce scanty, but not necessarily painful menstruation, though such conditions may be associated with dysmenorrhea and may presumably act as contributing causes.

When the flow is too free or profuse it may indicate inflammation of the endometrium, or the uterine body of the adnexa, a growth in the uterine cavity or in the wall encroaching upon the cavity, or obstruction to the return circulation from the uterus by growths external to it, or inflammatory exudates in the broad ligaments, or adhesions so distributed that the vessels are constricted. Prolapse of the kidney by pressure on the ovarian vein also causes obstruction to the return flow from the uterus, and we find it often associated with this type of dysmenorrhea. Displacements of the uterus also appear at times to be a cause of this form of dysmenorrhea, retroversions and anteversions in particular, while, on the other hand, flexions are more frequently associated with the other form characterized by scanty menstruation. Whether the displacement is a cause or the result of dysmenorrhea or merely coincident cannot always be positively determined. It is nevertheless true that permanent correction of these displacements by an operation that maintains the uterus in position invariably cures the dysmenorrhea, provided contributing causes are likewise removed.

I recall a case that illustrates this point very clearly. A lady, when forty-one years old, was submitted to operation for fixation of a prolapsed kidney and suspension of the uterus for retroversion, and was thereby completely cured of an unusually severe dysmenorrhea that had continued since puberty, confining her to bed for several days at every period. During this time pessaries had been used to support the uterus, and dilatation and curetting had been resorted to also, all of which afforded only temporary relief and only moderation of the pain.

Not all forms of dysmenorrhea, however, are characterized by either scanty or too profuse menstruation. In some cases the amount is normal yet the pain may be severe.

The pain during menstruation is not always uterine, though it may be referred to the uterus most frequently. Its actual location at times is the ovary or the Fallopian tube leading from the ovary to the uterus. A diseased condition of the ovarian structure may make rupture and discharge of the ovum painful, or obstruction at the uterine end of the tube (its narrowest part) may give rise to pain from the effort of the tube to expel the blood and ovum into the uterus, inducing spasm of the muscular structure of the tube wall as well as that of the uterus.

The pain may be more severe before the flow makes its appearance, and then upon its free establishment becomes less severe or abate

completely, or it may not occur until the flow ensues and continue throughout; or there may be no pain until the flow ceases. Pain that occurs before the appearance of the flow is usually of ovarian origin, or it may be tubal. When the pain is paroxysmal in the beginning and the flow is intermittent and scanty, it usually denotes obstruction at the cervical canal. When the pain continues throughout menstruation it is evidence of some chronic inflammatory condition of the uterus (metritis, endometritis) or adnexa (the tubes and ovaries), and when the pain is more severe or continues after menstruation has ceased, and especially if a discharge follows the menses, with at times insufficient flow, it usually denotes interference with the circulation of the uterus by growths or deposits, such as post-inflammatory exudates, or it may be displacement of the uterus.

At times dysmenorrhea will begin with the first menstruation at puberty, and will go on increasing in severity from year to year, which would seem to indicate that the condition causing it is steadily progressing. Hence it is most unwise to let it go unremedied. I have observed ovarian cystomas and ovarian cysts in cases of this kind, and it may be presumed that their cause was neglect of early correction of the condition producing the dysmenorrhea, since dysmenorrhea maintains a congested state of the ovaries. In other cases the dysmenorrhea is relieved or aggravated by marriage even when pregnancy does not occur. Aggravation of this symptom after marriage certainly calls for immediate investigation and immediate steps for its relief. But dysmenorrhea may first make its appearance after marriage. When a girl, who has been menstruating normally and without pain before, develops painful menstruation after marriage, it almost always indicates infection from the husband and calls for prompt action. It may, it is true, arise from improper marital relations, excesses, or efforts to prevent conception, but it should then likewise be given prompt attention.

Treatment.—From the foregoing it is evident that it would be impossible to outline any particular method of treatment for dysmenorrhea that would be applicable for all cases. Every case must be dealt with individually, and the treatment resolves itself into correction of the condition producing it. In other words, its cause must be sought and removed. This is the only rational procedure that can be adopted. Hence it is only possible to state tentatively what method of treatment would be appropriate if certain conditions were operating as causes.

If the cause is found to be cervical obstruction, dilatation of the canal is manifestly proper, but it should be maintained to insure permanent relief. Recontraction would bring about recurrence of the obstruction

and return of the pain. Other conditions that may act as contributing causes of the pain or maintain increased congestion of the pelvic organs must likewise be given attention at the same time, and must be corrected. For instance, impaired general health, unfavorable environment, prolonged engagements, unsatisfied or imperfectly relieved sexual excitement, and conditions within the pelvis and above in the abdomen that are maintaining congestion of the pelvic organs, as prolapse of the kidney's constipation, intestinal indigestion, etc.

Dilatation may be accomplished by means of the steel dilator under anæsthesia, and should be maintained by the introduction of a drainage stem through the canal, which should be inserted immediately after dilatation and kept in place by a tampon. It should be retained in position for a week, being removed from time to time for the purpose of cleansing and irrigation of the cavity of the uterus. Meanwhile the patient must be confined to bed. At the time of dilatation the cavity of the uterus should be curetted, and special attention should be bestowed upon the internal os, where the sharp curet should be used to remove indurated elevations upon the surface of the mucous membrane. In some cases the same thing can be accomplished by repeated application of negative electrolysis with conical electrodes without anæsthesia, and the treatment can be carried out at the office without confining the patient to bed.

Displacements of the uterus should be corrected by operation, since no positive reliance can be placed upon pessaries, as a rule, for correcting such conditions, posterior displacements in particular, when associated with dysmenorrhea. Anterior displacements, however, may often be corrected by dilatation as described above, followed by vaginal support of a properly adjusted pessary, and in some cases by negative electrolysis aided by the pessary.

When dysmenorrhea is due to imperfect development, electricity judiciously used will accomplish a great deal. Both the galvanic and faradic currents are to be employed, and the applications are made through the uterus by means of an electrode inserted into the cavity. But it will be necessary to continue these applications for a considerable length of time in order to accomplish the desired result.

In some cases more radical measures will be required, though, unless the necessity is plainly pronounced, they should not be resorted to until other methods of relief have been employed and have failed. It would be quite useless, as well as most unwise, to persist with treatment that did not afford relief or gave no evidence of effecting a cure.—*International Journal of Surgery.*

The Clinical Significance of Glycosuria in Pregnant Women.

A positive reaction with Fehling's solution during pregnancy does not necessarily indicate the existence of diabetes but is usually due to lactosuria, or to transient, alimentary, or recurrent glycosuria. In such cases it is imperative to determine whether the sugar occurs as lactose or glucose, for lactosuria is without clinical significance and is probably associated with premature activity of the breasts. The fermentation and the phenyl-hydrazine tests should therefore be applied.

The significance of glycosuria is not so clear. If alimentary in character, it may be disregarded with impunity. Otherwise, it may be of the transient or recurrent variety, or may indicate the existence of true diabetes. If glycosuria appears late in pregnancy, does not exceed 2 per cent. in amount, and is not accompanied by symptoms, it is probably transient and may disappear spontaneously at any time, or persist until the end of pregnancy. In either event it is usually of slight clinical significance, and merely indicates that the patient should be carefully watched. If the sugar appears in pregnancy and in large amounts, the condition is more serious.

Pregnancy may occur in diabetic women, or diabetes may become manifest during pregnancy. Either is a serious complication, although the prognosis is not so alarming as is frequently stated; many patients do perfectly well, while a smaller proportion die in coma, or collapse at the end of pregnancy, or during or shortly after labour. If the output of sugar is large and cannot be controlled, or at least markedly diminished, by suitable dietetic and medicinal treatment, the induction of abortion or premature labour is indicated even in the absence of serious symptoms, and much more so when they are present. In pregnant women, as in any other cases of diabetes, it is important to remember that the actual presence of sugar in the urine is not a sign of bad prognosis unless there is at the same time evidence of acidosis. This is indicated by the presence in the urine of di-acetic acid and acetone, in addition to sugar. It is much more important to apply the sodium nitroprusside test to the urine in cases of this kind, therefore, than it is to rely on Fehling's test alone.—*The Hospital*.

The Vomiting of Pregnancy Treated by Adrenalin.

REAUDI speaks highly of his experience in the treatment of a severe case of hyperemesis gravidarum of more than two months' duration by means of adrenalin in small doses. Various remedies

had been tried, and artificially-induced labour was seriously contemplated. In whatever way the drug acts—whether by neutralizing the toxins produced in pregnancy, by toning up the nervous and muscular system, as an antitonic, as a stimulant of tissue change, or as a regulator of the vasomotor system, or in any of the other methods which have been theoretically suggested—the author is convinced of its great therapeutic success in the cure of obstinate vomiting of pregnancy.—*The Medical Times*.

THERAPEUTICS.

Effect of Drugs on Blood-vessels.

DRS. EPPINGER and HESS have studied, according to the method of E. O. MEYER, the action of certain drugs that are known to influence in some way the vascular system. Blood-vessels removed from animals immediately after death are suspended in a solution containing the drug to be studied, and the changes in their length which they undergo are registered and observed by means of a kymograph. Comparing the effects produced on peripheral arteries with those on the coronary arteries it is found that these two kinds of vessels are affected differently by some of the drugs. Thus with adrenalin the coronary arteries dilate, while the peripheral arteries contract. Just the inverse happens with choline, eserine, and pilocarpine. The digitalis group cause contraction of both kinds of vessels, and atropine, ergotine, and the nitrites cause dilatation. Also caffeine and theobromine dilate the two kinds of vessels. Iodides are found to have no effect at all. The authors suggest that these facts are of therapeutic interest, for in some cases it would be desirable to associate two drugs together in order to produce an effect at the same time upon the vessels of the heart and on those of the periphery.—*The Hospital*.

On Medinal.

PERETTI reports on his experiences with Medinal at the Grafenberg Asylum. The remedy was employed internally in forty-two cases of lunatics of various categories, in all about 500 doses of generally 0.55 grm. in 30 grms. aq. menth. The success was very similar to veronal (0.5 grm), but the effect was prompter. I never noticed that the patients became habituated to the remedy, nor that it had any cumulative effect or unpleasant by-effects. The greater solubility of Medinal in cold water (1:5), compared with veronal (1:145), affords not only the advantage that its internal administration is easier, and it is more quickly resorbed, but also in cases where the stomach must be protected it can be applied per rectum and subcutaneously. Subcutaneous injections, even 10 per cent. solutions, which have been tried in four cases, are not

quite painless. Medinal was most efficacious in cases of slight depression and in simple insomnia of a neurasthenic character. In severe depression the nights were a little better than when nothing had been given. In organically produced disturbances the effect was uncertain, senile women reacting a little better than senile men. In paralytics the remedy often proved useless. In cases of excitement in lunatics Medinal is not an efficient substitute for the other subcutaneously applied remedies, such as morphia and scopolamin. — *The Therapist*.

The Local Use of Chloral Hydrate.

THOUGH chloral hydrate may be ranked as one of our best known and most widely used narcotics, its local action upon bacteria and upon tissues does not seem to be very generally appreciated. For a number of years various practitioners have been using solution of this salt for local application to contused and inflamed tissues, and these claim that in such conditions as bruising of soft parts, burns, sunburns, and even acute arthritis it is a decidedly effective anodyne. In the *Munchener Medizinische Wochenschrift* for November 23rd, 1909, HELLER describes several ways in which the salt is of value for its local activity. He first calls attention to its powerful deodorizing effect, he having for many years used 5 per cent. solutions for the preservation of pathological specimens, and as a useful and effectual wash for the hands, hair, and beard of the pathologist, removing completely the clinging odours of the autopsy or dissecting room. Besides its use in the laboratory, he says it is of great value in the clinic, especially in cases of tonsillitis and pharyngitis. His procedure of treating such cases consists of taking into the mouth a small amount of a 2½ per cent. solution of chloral hydrate, and, after throwing the head back, of swishing the fluid about in the throat without gargling. In the same article PROF. QUINCKE notes that he has used the drug for sore throats for many years with excellent results. In lues, diphtheria, and Vincent's Angina, QUINCKE still applies bichloride, but in all other forms of sore throat, and in those cases of lues, also, in which mercury is contraindicated, he has used a 2 per cent. solution of chloral, by means of a powerful spray. In the nose in diphtheria and other purulent processes a 1 per cent. solution in normal saline is used, while in ulcerative stomatitis, especially of mercurial origin, a 2 per cent. spray, or a 1 per cent. wash is of great value. This ensures mechanical cleansing, disinfection, and deodorization, and, following the initial burning, a decrease of pain. Chloral would thus appear to be an ideal agent for the treatment of angina, and may prove of value in other forms of inflammation of mucous membranes. — *The Therapist*.

Salol in Tooth-powder.

THE dangers of using tooth-powder in which salol is a constituent are drawn attention to in an article in *Le Lyon Medical*, as the result of an observation of DUBREUIL, who states that he has met with several cases of labial eczema in persons who have used powder containing this drug. The decomposition of salol into salicylic acid and phenol sets up an irritation of the labio-buccal mucous membrane and of the skin of the lips. The writer goes on to remark that having regard to the frequent presence of the drug in tooth-powders and to the comparative rarity of labial eczema in the users thereof, the risks of contracting the condition cannot be very great. — *The Hospital*.

OPHTHALMOLOGY.

The Operative Treatment of Chronic Glaucoma

Other Than by Iridectomy.

A HISTORICAL COMMENTARY.

BY

CHARLES F. BEARD, M.D.

Chicago, Ill.

The history of glaucoma, and all that is connected with the disease, as we regard it to-day, virtually extends back but little over half a century. It is true that MIDDLEMORE, of London, suggested scleral puncture for the relief of grave affections of the eye, characterized by abnormal hardness of the globe and progressive loss of sight, about eighty years ago, and that the great Scotch clinician McKENZIE, actually made the operation in such a case about the year 1830. McKENZIE considered the measure only a palliative one. Indeed, glaucoma in any form was deemed incurable till the brilliant work of ALBRECHT VON GRAEFKE, which began subsequent to 1885. GRAEFKE'S first antiglaucomatous iridectomy was made in 1856, and his classic and epochmaking reports on the working of iridectomy in inflammatory glaucoma appeared in the years 1857 to 1859. Little had been learned even as to the symptomatology of the disorder till the study was taken up by TAVIGNOT, the elder DESMARRES and VON ARLT, just prior to the discovery of the ophthalmoscope by HELMHOLTZ, in 1851. These three listed most of the symptoms. They failed, however, to include anæsthesia of the cornea, the signs and changes in the fundus and those relative to the visual and color fields. ED. JAEGER, ARLT's predecessor, in 1854, was the first to note the peculiar appearance of the optic disc, but, strange to say, made the mistake of taking the excavation for a mound, or swelling. About the same time VON GRAEFKE

discovered the arterial pulse, and in 1855 he found that the disc was cupped instead of elevated as JAEGER had supposed. This same acute observer, in 1856, cited contraction of the nasal field as a characteristic sign of glaucoma. In the same year H. MUELLER called attention to the union between the peripheral portion of the iris and the cornea, though it seems that DONDERS had made the same observation, *i.e.*, the obliteration of the iris angle, in 1855, attributing it to the hypertension of the globe. In 1868 VON GRAEFE was already aware of the pernicious effects of mydriatics upon glaucomatous eyes, and employed the extract of physostigmin, or Calabar bean, to counteract the dilation of the pupil; while LAQUER, in 1876, was the first to recommend eserine for the same purpose. About the same time ADOLF WEBER, of Darmstadt, also discovered the miotic properties of this drug.

The operative measures for chronic glaucoma are divided into *intra-bulbar* and *extra-bulbar*. To the first, exclusive of iridectomy, belong the various forms of sclerotomy, posterior and anterior. During the twenty years subsequent to the interventions of Middlemore and McKenzie only posterior scleral puncture was resorted to though the elder Desmarres, about 1847, had cured a case of "inflammation of the aqueous membrane, of an intermittent character, with insupportable pain," by a simple paracentesis of the cornea, which was doubtless, in reality glaucoma. HANCOCK in 1860 on the theory that glaucoma was due to contracture of the circular fibres of the ciliary muscle, strangling the vessels and nerves, tried replacing iridectomy by division of this muscle, under the name *intra-ocular myotomy*. With a Beer's knife he made an oblique section beginning at the limbus, passing outward and backward, and engaging sclera and muscle, between exterior and inferior. There were several modifications of this procedure by other operators.

DEWECKER, in 1865, having studied the nature of the scleral scars following the operation of iridectomy for glaucoma, and having noted their porosity, was the first to conceive the idea that a filtration cicatrix was the essential thing in such surgery and that the excision of the iris was superfluous. Sclerotomy to replace iridectomy, however, was introduced by STELLWAG VON CARION, in 1868. But STELLWAG did not make sclerotomy after the idea of DEWECKER, *i.e.* to obtain a filtration scar; but rather to relieve what he imagined as regarded the malady in question to be the too great rigidity of the sclera, particularly as concerned the outermost fibres. He made a large, very oblique incision of the sclera, posterior to the corneal limbus. Among the many theories advanced to account for the high intra-ocular tension was

that of a low grade of inflammation of the sclera, with thickening and contraction of that tunic, especially of its outermost fibres, and to this was directed STELLWAG'S sclerotomy. He later fell in line with DEWECKER, and abandoned posterior for anterior sclerotomy. Then followed the different more or less ingenious modes of anterior sclerotomy. Prominent early originators in this field were DEWECKER, QUAGLINO and MAUTHNER who elaborated the technic, and popularized the procedure. In 1883, PANAS gave a method of anterior sclerotomy which he called *oulétomie*, specially destined, as its name implies, for incising the cicatrix in case of relapsing glaucoma after iridectomy, where adhesions and inclusions of the iris had occurred. This consisted in making the usual punctures with a very narrow Graefe knife near the ends of the remaining cicatrix, and so completing the section as to include the entangled iris and scleral scar, but leaving intact a narrow bridge of conjunctiva. At times he also divided the latter. DEWECKER made a similar operation which was named "cicatriscotomy." These two procedures might be named secondary sclerotomies.

It is highly probable that in all these primary, clean anterior sclerotomies that the paracentesis is the therapeutic factor, and not the peculiar manner of the incision. True the relief is always immediate, and often lasting. To filtration cicatrices we shall return.

Another form of intra-bulbar operation is that which concerns both the iris and the sclera. It might be a combination of sclerotomy and iridectomy, (sclero-iridectomy) as first made by the elder TERSON in 1885; or sclerotomy with incision of the iris, (sclero-iritomy) like that of NICATI, dating from 1892, and the *internal irido-sclerotomy* of VICENTIS devised in 1893, or, sclerotomy with tearing of the iris, (sclero-dialysis) first practiced by DEWECKER, in 1894, and CHIBRET'S operation made in 1897. This surgeon pushed a keratome or Graefe knife into the anterior chamber through a 3 or 4 mm. long wound canal, engaged the iris with the point and pushed on, making irido-dialysis. He would repeat this in different meridians, as many as 5 or 6 times. Some of these measures are not essentially different, as regards their effects, from the ordinary iridectomy, which is not under discussion. It may be permitted in passing to refer to one form of sclero-iridectomy, out of the ordinary, *viz.*, that of LOGETSCHNIKOW, of St. Petersburg, first described in 1894. Here the excision of iris comprises but a tiny section at the extreme periphery, and it is destined as a sluice-gate only. As the cornea and sphincter are left intact miotics may be still employed to advantage. POPE made a similar iridectomy for optical purposes in 1871.

Other measures in this category, also, seem to act in a way quite different from the ordinary iridectomy.

On the principle that glaucoma is the result of *anterior retention* are based those operations whose object is the freeing of the union of the iris and the cornea in the angle of the anterior chamber, or of establishing communication between the contents of the anterior chamber and the plexus of SCHLEMM. To these belong VICENTII'S and NICATI'S incisions of the irien angle, and DeWECKER'S and other forms of irido-dialysis. TAILOR, in 1891-6, demonstrated by experiments upon the eyes of dogs that operations like that of Vicentiis do put into communication the anterior chamber and the intra-trabecular spaces, and that they give access to the inter-fascicular spaces of the ciliary muscle when these also are engaged by the knife. Solution of fluorescein injected into the anterior chamber disappeared more quickly in the operated than it did in the control eyes: and, inversely, when injected into the veins the solution appeared earlier in the anterior chamber of the operated than in the unoperated eyes.

HERBERT and PRIESTLEY SMITH, in the last years of the 19th century and the first years of the 20th, believing that subconjunctival sclero-corneal fistula was the essential thing in operations for chronic glaucoma, made artificial incarceration of the iris to produce this fistulous scar. Their methods were something after the manner of the old irido-enceleisis made by ADAMS in 1812, and that of HIMLAY, in 1843. HOLTH, of Christiania, Norway, averred, before the French Society of Ophthalmology, in 1906, that he had never observed a filtration scar after a correct iridectomy for glaucoma, but had seen it only in those instances where existed an incarceration of the iris in one of the angles of the wound, thus constituting the necessary filtration cicatrix. With this idea he made irido-enceleisis in 127 cases of chronic glaucoma, and with results far superior to any he had obtained with classic iridectomy.

Trepanation of the Sclera, or Sclerectomy.—Still another form of intra-bulbar surgery for chronic glaucoma having for its object the much-sought-after filtration scar, is that by which a small portion of the sclera adjacent to the limbus is excised. Sclerectomy to lower intra-ocular tension was, I believe, first done by ARGYLL-ROBERTSON, in 1876, but the trepanation was here an equatorial one for absolute glaucoma. Recently such procedures have been rather extensively practised for chronic glaucoma by LAGRANGE, and ROCHON-DUVIGNEAUD, but nearly always in conjunction with a generous iridectomy. Still later, in 1908, HOLTH, just alluded to, not having been quite satisfied with his irido-enceleisis, devised a modification of LAGRANGE'S sclerectomy. He now

makes a long, slanting, subconjunctival incision, with a lance keratome, as if for an iridectomy, from one lip of which,—more often the anterior one,—he removes a crescentic piece of the sclera, by means of a punch. He then makes a tiny, extremely peripheral iridectomy, after the manner of LOGET-SCHNIKOW, not for any therapeutic effect upon the glaucomatous process, but to prevent hernia or incarceration of the iris. HOLTH claims for his method greater freedom from such accidents as expulsive hæmorrhage, rupture of the zonule, and greater certainty of obtaining a true and lasting fistulous or filtration scar.

Cyclodialysis, or the establishment of communication between the anterior chamber and the supra-choroidal space.—This is yet another mode of intra-bulbar surgery for chronic glaucoma. A forerunner of the method may be found in an operation devised by CHIBRET, in 1883. This surgeon, in order to make a filtration scar, punctured the sclera very obliquely with a stoplance, entering the anterior-chamber through the angle of the iris. He reopened the wound daily, for a period of three weeks, either by pressure massage over the cornea, or with the aid of a blunt instrument, which he poked through the wound. FUCHS found detachment of the choroid in about 10 per cent. of cases after iridectomy. In such instances the good effects of the operation are not apparent till after the subsidence of the detachments, which usually occurs in a few days. FUCHS thought these detachments were the result of tearing the uvea away from sclera at the iridic angle, permitting the aqueous to enter the supra-choroidal space. This, in turn, led AXENFELD, in 1903, to suggest this as an explanation of the benefit derived from iridectomy. This consideration caused HEINE, of Breslau, in 1904, to invent the operation of cyclodialysis. This consists in an attempt to make permanent communication between the anterior chamber and the supra-choroidal space. The good results which occasionally follow this procedure are probably due to freeing the angle of the anterior chamber and not to persistent choroidal detachment. It would seem that complications are more prone to follow this than most other operations for chronic glaucoma.

Extra-bulbar Methods.—Among the earlier surgical measures for the relief of chronic glaucoma, where the intervention did not directly involve the diseased eye itself, was *ciliary neurotomy*, introduced by MEYER and SECONDI, in 1870. Then optico-ciliary neurotomy, proposed by BOUCHERON, in 1876, for eyes blind from absolute glaucoma. Then followed stretching or elongation, and even the plucking out, of the external branch of the nasal or infra-trochlear nerve, originated by BADAL in 1883. None of these several procedures ever accomplished much more

than to afford relief from pain, temporary lessening of tension and other symptoms, hence, as true curative agents proved but illusory.

On the theory that the ciliary ganglion regulates the circulation of the anterior segment of the eye, ROHMER, in 1902, tried extirpation of this body, by Kroulein's operation, in painful absolute glaucoma. The pain was relieved but not the tension. Ciliary neurotomy would have accomplished the same result in a simpler manner.

ABADIE, of Paris, in 1897, inspired by the theories and experiments of Wegner, which dated from 1866, and assumed that glaucoma was due to hypersecretion of liquid within the eye induced by vaso-motor excitation, conceived the idea that ablation of the superior cervical ganglion of the great sympathetic nerve would be an advantage in the treatment. But it was JONNESCO of Bucharest, in 1898, he of stovain-cocain fame, who made the first sympathectomy for this purpose. This operation has since been rather extensively resorted to in various parts of the world, but, while the results have been in a measure effective, they have been, on the whole, far from brilliant, and disaster and even death have been known to follow; and whatever was gained by the measure has most often been dissipated by time.

Electricity.—Both the galvanic and the faradic currents have been brought to serve as agents in the extra-bulbar treatment of chronic glaucoma. As in sympathectomy, on the principle that chronic glaucoma is the result of vaso-motor excitation, ALLARD, in 1899, had the idea to modify this excitability by the application of a strong galvanic current to the sympathetic nerve. He employed a negative electrode whose surface was 300 square centimeters in area applied to the nape of the neck, and a positive in the form of a strip of metal 8 or 10 inches long and one centimeter wide placed over the furrow corresponding to the anterior border of the sterno-mastoid muscle. The current was from 15 to 20 milliamperes, and of an electromotive force of 20 volts. The applications were for 15 to 20 minutes 3 times a week till 15 to 20 treatments were given. The results were reported as most satisfactory.

In cases of simple, chronic glaucoma, with marked optic atrophy, both the faradic and the combined currents have been applied to the lids of the affected eye, sometimes with apparent benefit.

Malaxation or Massage.—Digital massage was first proposed, in this connection, by SCHENKL and KLINE, in 1882, and first methodically executed by DIANOUX, in 1883, but in conjunction with anterior sclerotomy. The manipulation tends to retard healing of the wound and to render the cicatrix more permeable. Later, in 1899, the practice was revived by

DOMEC, of Dijon, and others. This sort of massage consists, in the main, of pressure, by the thumb over the center of the cornea, through one or the other lid. It is performed daily in sittings lasting from one to five minutes, preferably after puncture of the cornea, but sometimes without previous surgical interference; always, however, in conjunction with miotics. In some instances the massage is begun on the day of the operation—in others it is delayed for several days, or till after closure of the wound. By pressure massage over the center of the cornea one expects to get dilation of the vessels and excretory channels around the rim of the anterior chamber, whereas, by pressure on the sclera the lens and the iris are forced forward and the tendency is to narrow and block said channels.

Subconjunctival Injections.—These have been made in chronic glaucoma just as they have in diseases like irido-cyclitis, detachment of the retina and others, the supposed effects being osmotic, counter-irritant, antiseptic, lymphagogue, etc. Weak solutions of sodium chlorid undoubtedly aid in restoring normal tension in an eye that has become too soft from traumatic uveitis. Whether or not they would work the other way in a glaucomatous eye the writer cannot say. Of late, THOMAS and FISHER, of Oakland, California, have reported cases of glaucoma treated with marked benefit by subconjunctival injections of sodium citrate solution. Their theory is that glaucoma is essentially an oedema of the eye-ball caused by the presence in the globe of substances, like acids, which increase the affinity of the tissue colloids for water. The sodium citrate, we are told, is most potent to counteract the influence of the substances that increase said affinity, hence its efficacy in reducing the intraocular tension.

Choice of Operation.—Of all the surgical procedures here under consideration, unfortunately none can be regarded as a cure in the true sense of the word, that is to say, as something that strikes directly at the cause of the morbid process, but merely as a means of counteracting the most conspicuous symptomatic factor of this process, *viz.*, the hypertension. To combat this successfully is, at present, about all that one can hope to accomplish. To this end then it would seem that of the various measures we have mentioned those which consist either wholly or in part of some form of anterior sclerotomy promise most for the victim of chronic glaucoma. As before stated, the simplest of these gives at least temporary relief. The question then is: how best to make the relief from this source most lasting. Shall it not be by importing a certain permeability to the resulting cicatrix? Most likely.

The Filtration Scar.—What are the features most desirable in such a scar? Surely something other than permeability alone. A cystoid

scar may be salutary or malicious according to its size and its anatomical constituents. If of proper proportions and make-up it may serve to maintain the equilibrium of tension without becoming a menace to the eye. If progressively large and the uvea be too greatly involved it becomes a source of irritation and danger. HOLTZ makes a distinction between a *filtration scar* and a *fistulous scar*. The last is the more permeable but, in that it usually means an incarceration of the iris, its capacity for harm may overbalance whatever properties it possesses for good. It may even reach the stage of calling for surgical intervention on its own account. A serious drawback common to both forms of cystoid scar is that they offer a vulnerable point for the entrance of pathogenic bacteria. The kind most devoutly to be wished is, perhaps, one of moderate size and porosity, situated at the very outermost limits of the sclero-corneal junction, loosely covered by healthy conjunctiva, and without involvement of any portion of the uvea. It is possible to obtain such a scar by a simple incision, especially if followed by pressure massage over the cornea. It is also possible by the incision combined with excision of a part of the sclera at the site of the wound, and the omission of the massage. Untoward consequences are less to be dreaded after these methods of antiglaucomatous surgery than most others. Grave complications like detachment of the choroid, rupture of the zonule, explosive choroidal hæmorrhage and malignant glaucoma, not uncommon after iridectomy, are almost unknown in relation to these operations. Moreover, if one fails in his object by a single intervention he is not only justified but actually called upon to repeat the operation—even again and again if necessary.

In conclusion a few words of caution are deemed fitting. In no case, for instance, should one think of resorting to an intra-bulbar operation for chronic glaucoma if by the use of miotics and attention to the general bodily condition the tension of the eyes could be kept within normal bounds. As regards the best means of keeping in touch with the degree of the intra-ocular tension ophthalmologists are rapidly learning that palpation is not to be relied upon, but that the intelligent employment of the tonometer is a prerequisite.—*The American Journal of Ophthalmology*.

The Adverse Influence of Diabetes in Certain Operations on the Eye.

CHARLES STEDMAN BULL says that it is well known that operations on the eyes of patients with advanced diabetes have been followed by fatal results, the patients dying in coma. During the

coma the urine is usually free from sugar, even if it has been abundant prior to the attack. The coma may set in within twenty-four hours after the operation, or it may be postponed for several days. In some of the cases which were followed by unfortunate complications, the diabetes was accompanied by gastrointestinal symptoms and by enlargement of the liver, but the latter gradually subsided. It is probable that the pancreas was also diseased in these cases, as chronic pancreatitis is of very frequent occurrence in chronic diabetes. A prolonged and close observation of the cases under his care, which were followed by various complications, seemed to offer evidence of a greater deficiency of fermentative action than in other cases free from these complications. Whether psychic, nervous, or organic influences were originally at fault in these cases, it was evident that the prognosis for operation was more unfavorable, the more marked was the defective metabolism of the carbohydrates. Whether this failure of fermentative action in these cases occurs through the blood current and tissues of the body, or in the digestive tract, we do not yet know. It is not wise to introduce a strict antidiabetic regimen in a patient immediately before operating, especially if the patient has not been accustomed to it. On the other hand, such a regimen, to which the patient has for a considerable time become accustomed, should not be interrupted at the time of operation. In other words, any change from the general routine of nutrition should not be made in any patient immediately before the operation. The complications which have occurred in his experience after operations on diabetics, have been mainly either iritis, hæmorrhages into the anterior chamber, or an infection of the wound as manifested by slow healing. In the cases of iritis there was a marked maceration of the pigment epithelium of the iris, a fact long since pointed out by SNELLEN. He has also noticed a rather marked tendency to infection by micro-organisms after operations on diabetics, and it is known that this has been observed in other branches of surgery. In view of these facts it would seem wise to have tests made of the bactericidal power of the blood serum in diabetes. BULL gives an analysis of 115 cases, and concludes that we must carefully distinguish those diseases which are directly due to diabetes as a cause from those which may occur independently of the disease. The abnormal products of metabolism, acetone, diacetic acid, and oxybutyric acid seriously complicate the prognosis, and must, as far as possible, be eliminated before any operation is undertaken. Arteriosclerosis plays an important role in the ætiology of the disease and its complications. The prognosis does not depend on the percentage of glucose in the urine, but on the degree of acid intoxication. The possible connection between diabetes and

tuberculosis needs more searching investigation before any positive opinion can be formed.—*The American Journal of Ophthalmology*.

PAEDIATRICS.

Common Errors in Infant Feeding.

BY

ERIC PRITCHARD, M.A., M.D., M.R.C.P.

Errors in the feeding of infants, and the catastrophies that follow, are by no means confined to artificial methods. During the first few days of the puerperium the mammary secretion, or colostrum, is extremely scanty. It is non-stimulating, non-coagulable, and yet adequately nutritious for the requirements of the nursing. In fact it is exactly the food that on theoretical grounds ought to be supplied to the small, sensitive, and undeveloped stomach. The sugar which it contains is capable of immediate absorption without alteration in the digestive tract. It is dextrose and not lactose, by which it is replaced on the establishment of full activity of the mammary gland. Before lactose, which is a poly-saccharide sugar, can be absorbed, it must be digested or split up into its mono-saccharide components—dextrose and galactose—by an inverting ferment (invertin). At birth this ferment is not present, or exists only in minute traces.

The chief function of the fully developed stomach is to act as a reservoir for solid food, and to co-operate with the masticatory organs in disintegrating and rendering it soluble. The pyloric sphincter acts as a guard to the intestines, and prevents large particles from gaining access to the highly sensitive mucous surface of the duodenum. At birth the pylorus is extremely sensitive, and liable, especially in spasmophilic subjects, to become forcibly and tonically contracted when solid particles attempt to force a passage. For this reason Nature provides the new-born infant with colostrum and not with milk, for the former, unlike milk, is non-coagulable. The transition from colostrum to coagulable milk is slow. It may be 10 days or more before the mammary secretion becomes a true milk. During this time the stomach has been functionally developing, acquiring tolerance for coagulated casein, and learning to peptonise or liquefy it. Attempts to evade or short-circuit this route lead to disaster. Hence new-born infants started on the statutory mixtures of 1 part of milk and 3 of water, or on the most approved percentage combinations, often fail. Undue stimulation of the stomach by excessive quantities of diluted milk causes hypertrophic stenosis of the pylorus.

Bad results can be avoided by providing the new-born infant with a food which physically resembles colostrum, and it is to this that proprietary foods owe their popularity. Allenbury food No. 1, for instance, is admirably designed as a substitute for colostrum; it is pre-digested, non-coagulable, non-irritating, and adequately nutritious. But the very features that make it so excellent a substitute for colostrum render it a bad substitute for human milk. No such pre-digested, non-coagulable food can develop the digestive functions of the stomach and alimentary tract. Nature does not provide the infant at or about the tenth day of life with a coagulable food like milk without a good reason. She does not give a liquid food by the mouth and render it solid in the stomach a few minutes later without design. The reason, of course, is to gradually train the stomach to liquefy solid food before the stage of weaning arrives, when the infant often has to subsist "on the same food as we eat ourselves." The writer does not recommend Allenbury No. 1 or any of its congeners as a substitute for colostrum. He thinks there is no better food for the new-born than simple undiluted whey prepared on the ordinary domestic plan from fresh milk and rennet, or more economically, and just as well from separated milk. It is non-stimulating, non-coagulable and adequately nutritious. Further, digestive training may be ensured by adding slowly the elements which develop the functions of the stomach—a coagulable proteid such as caseinogen and an emulsified fat such as cream. The method is extremely simple and the results highly satisfactory.

Cases of wasting and dyspepsia due to disregard of the teaching of the colostrum period are common in hospital practice. Infants who have not learnt to digest mother's milk are suddenly confronted with the still more indigestible milk of the cow. In private practice wasting infants are often seen who immediately after birth have been submitted to a wet nurse in full lactation. If the healthy infant cannot short-circuit the colostrum period how much more improbable is it that a delicate infant can dispense with simple lessons in digestion, and learn to run before it can walk!

No new-born baby should be provided with a wet-nurse until it has served an appropriate apprenticeship, such as described, on an artificial substitute for colostrum. The fact that a few babies manage to "muddle through," is no argument against the more scientific methods. An infant can be taught to digest almost any food, provided that sufficient time be given and the stages of immunisation adequately graduated. All artificially fed infants should be taught to digest cows' milk, and genuinely refractory cases are rare, but sometimes the necessary steps to secure

this end are slow. For instance, if a baby has been brought up for 3 months on Allenbury No. 1, it may take a month to teach it to digest a diluted cow's milk appropriate to its age, but the lesson can always be learnt if at first a few drops, say 5, of cows' milk are added to each bottle, and the subsequent increments are correspondingly minute.

Another class of mistake is made in the quantities of food supplied to infants. In artificial feeding such mistakes are common, but owing to recent improvements in technique they are insignificant compared to the mistakes made in breast feeding. In nature there is some co-ordination between the supply of the mother and the demand of the infant. The strong, healthy infant, by reason of its active powers of sanction, affords the appropriate stimulus for a parallel activity of the secreting gland, while the feeble infant excites little reaction. BUDIN showed that while the weakly nursling may not be imparting sufficient stimulus to keep a mammary gland in active secretion, a single wet-nurse can successfully feed 4 or 5 infants by reason of their united efforts. But Nature does not always pursue the perfect way, and in many cases there is no co-ordination between the supply and the demand. Sometimes there is too much milk, sometimes too little. Apart from the physiological test, namely, the progress of the infant, the only means of ascertaining whether an infant receives enough or too little milk is what the writer terms the "test-feed"—weighing the infant before and after feeding on very accurate scales. The amount consumed is the difference in the two weights. This test can be confirmed in some degree by noting the amount of urine excreted, and by the character and quantity of the stools. Further, the size of the breast before and after feeding affords some index of the amount of milk abstracted. But these tests are not reliable.

The following case illustrates the kind of mistake that can be made by experienced people, and the great value of the weighing method. A baby was seen on Jan. 17, 1907, for obstinate constipation and loss of weight. The mother had been confined on the 4th at a well-known maternity institution, and the infant had been put to the breast regularly ever since. At birth it weighed 7 lb. 10 oz.; it now weighed 6 lb. 14 oz.—a loss of 12 oz. in 14 days. Though somewhat thin it was in good condition, had a good colour, and had never been sick. The writer suspected under-feeding, but was surprised to find the mother's breasts well developed, and affording the usual stream of milk on compression of the nipple. A test-feed was made: after waiting 2 hours since the last feed, the infant was put to the breast. The scales proved that it obtained less than 2 teaspoonfuls of milk. The writer therefore ordered

the mother to give 1 oz. of whey and 20 drops of cream alternately with breast feedings. During the following 6 days the test-feed showed that the amount of breast milk did not increase, but the infant recovered part of the loss in weight, for on the 24th it weighed 7 lb. 4 oz.—a gain of 6 oz. The whey and cream mixture was increased to 1½ oz. of whey and 30 drops of cream, and the mother was encouraged to preserve with breast feeding. On the 28th half a pound in weight had been gained, but the test-feed still proved that this was not due to breast feeding, for the infant abstracted only one teaspoonful of milk from the breast. On Feb. 4 the infant had gained a further ½ lb., but now the test-feed proved that it was obtaining a full amount (3 oz.) from the breast. The whey mixture was consequently suspended, and the infant made uninterrupted progress.

This case shows that with patience and perseverance an apparently non-active breast may ultimately secrete a good supply of milk provided that the infant can supply the necessary stimulus, and that the psychological factor is called into requisition. Encouragement on the part of the doctor and confidence on the part of the mother are most important.

Infants are frequently artificially fed under the belief that the breast milk has "dried up" on the fourth or fifth day. This mistake is made even in maternity wards. There is no criterion to show whether a woman is capable of ultimately secreting a good supply of milk or not. Further, as has been shown, only by the test-feed can it be ascertained whether an infant extracts a small quantity of milk from the breast or not. During the colostrum period, which often extends over 10 days, the secretion of the mammary glands is usually limited. The milk is often thought to "dry up" on the third or fourth day because the breasts, which have previously been hard and congested, often become soft and smaller owing to the resolution of the gland-cells into the colostrum secretion, which is extracted by the infant, and not always immediately replaced.

This mistake is well illustrated by the case of an infant born in Aug. in a maternity. It was brought to the writer at the end of Nov. bottle-fed and doing badly. The mother said that her milk disappeared on the fourth day, and that the authorities in the maternity told her to bring the infant up on the bottle. But in order to avert a second pregnancy she surreptitiously put the infant to the breast at night. She thought the practice was of no advantage to the infant, as she had no milk. But a test-feed showed that the infant had extracted from the breasts 3 oz. of milk. Suspension of the artificial feeding was ordered and the infant at last flourished on the breast.

Since systematically adopting the test-feed the writer has modified many of his views. He finds that among breast-fed infants it is not those who are inadequately fed according to accepted data who suffer from malnutrition, but for the most part those who receive an adequate or an excessive amount. In many cases the infant has thrived and maintained a good weight curve on a half and sometimes on a third of the quantity of milk that should be prescribed according to scientific criteria. Often an infant of 3 or 4 months is fed 10 times in the day, and obtains only from 1 to 1½ oz. of milk at a feeding, or about 12 oz. in the 24 hours. But in spite of the apparently good nutrition of such infants there are advantages in increasing their metabolism. Vigorous metabolism is a clear gain. A starvation diet of this kind is not calculated to promote active nutrition, active digestion, or good reserve powers of metabolic accommodation. When the test-feed proves that an infant is apparently maintaining its nutrition on a manifestly low diet the writer always supplements the defective supply with additional feeds from the bottle. Incidentally, the ordinary methods advised for increasing the breast supply itself are not encouraging, but full doses of iron, in the form of Bland's pills, distinctly improve both the quantity and the quality of the milk.

When supplementary feeding from the bottle is necessary owing to a deficient supply of breast milk, the test-feed is a guide to the quantity that should be given. An infant 5 months old, and accustomed, for instance, to 2 oz. of breast milk at a feeding, would be upset if the statutory allowance of 4 or 5 oz. of modified cow's milk were supplied from the bottle. The normal allowance should ultimately be arrived at, but only gradually. Many infants have their digestive and metabolic processes disturbed from neglect of this precaution, and the same is, of course, true when, at the time of weaning, artificial feeding is substituted for the breast.

Errors with respect to the quality of food are equally serious. The American methods of percentage feeding have shown that many symptoms, both digestive and nutritional, are due to mistakes in the qualitative "make up" of the food. In this country we have been slow to appreciate the advantages of the method. In Germany new interest has been given to accurate infant feeding by the work of CZERNY, KELLER, and FINKELSTEIN, and the coining of a new word, "food-injury," for the damage due to normal constituents in the diet has done much for the cause. The food-injuries of CZERNY—fat-injuries and proteid-injuries—are the old fat, sugar, and proteid dyspepsias of ROTCH and HOLT, but writ large

The injuries to the new-born due to giving proteid in the digestion of which it has not been trained have been pointed out. If proteid owing to excessive quantity, is not digested normally in normal situations, it is digested abnormally in abnormal situations by bacterial agencies, with toxic results. Bacterial infections, perhaps of autogenetic origin, dominate the situation when there is excess of nitrogenous food in the bowel. Parasites always congregate where they can live; where the carcase is, there are the vultures gathered.

But apart from excess of proteid the influence of foreign, or new forms of proteid on the infant, must be reckoned with. Despite the brilliant work of EMIL FISCHER and his school, there are whole classes of albumoses about which little is known. It is almost certain that many of these occur in human milk, and perhaps to a less degree in cow's milk, and that some of them are toxic. The milk of menstruating women and of epileptics is generally toxic, and has proved actually fatal to the suckling. Breast-fed infants often present severe toxic symptoms although nothing abnormal can be detected in the quantity or quality of the milk; and they subsequently progress normally on cow's milk modified to the same chemical standard.

Vomiting in infants nearly always represents a food-injury, but is more often the deferred result of some initial mistake than due to the method of feeding in force at the time. The habit of vomiting is easily acquired; it becomes, in fact an automatic reflex so sensitive and so insistent, that, no matter what the food, it is rejected with a persistency resembling the rumination of the cow. Infants who have acquired this habit from injudicious feeding when the nerve-centres are plastic and impressionable are unavailingly treated by changes in the diet or by bismuth and soda. The scientific method of treatment is to break the automatic nature of the habit by temporarily exhausting the centre, or by dulling its sensibility to stimuli from the stomach. For the latter purpose chloral, bromide, or chloretone are useful. When the habit is broken the drug may be suspended. The writer has tried a method of exhausting the centre with encouraging results. A harmless emetic, such as vinum ipecacuanhæ and carbonate of ammonium is given about half an hour before feeding. After the violent stimulus of the emetic the stomach fails to respond by vomiting to the milder stimulus of food.

For diarrhœa, treatment is often the reverse of scientific; it generally consists in giving mixtures of bismuth, chalk, and opium, and in changing the food from milk to a thin paste of arrowroot and water given

frequently and in small quantities. Diarrhoea usually represents a protective reaction to relieve a wounded organ, namely, the intestine, of the peccant material. A wounded intestine ought to be treated like wounds in other parts—by asepsis, and by rest. As long as food is taken the intestine cannot be at rest, neither can it be in a relatively aseptic condition. The treatment of acute diarrhoea by irrigation of the bowel with large clysters of very hot water, by the suspension of all food for 24 hours or more, and by the exhibition of opium and brandy is so successful that it is difficult to understand why any other should be adopted.

Chronic diarrhoea, in which the stools contain milky-white particles of what is popularly supposed to be the undigested casein, is usually treated by suspension of milk, and by the substitution of some other sort of food. These white particles are coiled-up flakes of mucus, and represent a deferred lesion due to a food injury. This can be proved by picking out a few of the most characteristic pieces and by teasing them out in water, when flakes of mucous or mucous membrane will be found. When such particles appear the condition is chronic colitis, and as such it should be treated not necessarily by suspension of milk.

In the early days of percentage feeding increasing percentages of fat was considered the rational treatment of chronic constipation instead of aperients, enemata, and glycerine suppositories. HOLT pointed out that undue increase in the percentage of fat was calculated to produce fat-dyspepsia (the fat injury of FINKELSTEIN). These fat injuries are quite distinctive and common among the infants of the well-to-do. The writer always treats chronic constipation with a petroleum emulsion. It acts purely mechanically; it lubricates the bowel, softens the motions, cannot be absorbed, and never produces any injuries or symptoms. This emulsion combined with skilful massage of the colon is the best remedy for this intractable condition.—*The Medical Review*.

THE ANTISEPTIC.

APRIL, 1910.

The "Independent Medical Profession" and the Abkari Department in Madras.



ORD MORLEY has written to the Government of India to encourage the growth of an independent medical profession in this country. We do not know what reply the Government of India have given to the Secretary of State to that recommendation. But we know that since the beginning of this month the Abkari Department of Madras has been on the war path about the possession of cocaine by some of the independent medical practitioners of Madras. We wrote on this subject in July 1906 and again in June 1907. Our readers might remember that in June 1907 we protested against the proposal of the Board of Revenue to exclude Hospital Assistants in private practice from the category of qualified medical men while including Hospital Assistants in Government employment among qualified medical men for the purposes of the cocaine regulations. Even the Madras Government remarked on that proposal of the Board of Revenue thus:—"The definition of a qualified medical practitioner is so framed that Assistant Surgeons and Apothecaries and Hospital Assistants who are not graduates in medicine and who are not in Government employ will not be able to prescribe cocaine at all without a prescription being countersigned by the District Medical Officer. The necessity for this rule should be fully explained." And the full explanation for the necessity for the rule was that the Surgeon General wanted it. Well, that was in June 1907. We heard nothing more about the subject till a few days ago. From June 1907, till April 1910, Hospital Assistants in private practice in Madras were prescribing cocaine, and such of them as have dispensaries were selling cocaine under licenses. From this we came to the conclusion that the Madras Government had decided not to put into practice the proposals of the Board of Revenue which manifested such invidious distinction between medical men in Government employ and the same class of men in private practice. But all of a sudden, from the commencement of the present official year, the Abkari Department has commenced to enforce the rules framed by the Board of Revenue

most rigidly, with the result that many Hospital Assistants in private practice are now prevented from prescribing cocaine or selling it.

We have protested against the rule and explained our views on the question fully in these columns in June 1907. We do not want to go over the same ground again now. All that we want to say now is this—that a rule which places a private medical practitioner at a disadvantage as compared with the same class of a medical man in Government employ, and which has been hibernating in a passive state for nearly two years, should all at once be roused to a state of active vigour within a few months after the receipt of a despatch from the Secretary of State exhorting the authorities in this country to encourage the growth of an independent medical profession appears to us to be of the nature of a practical joke. Is the Abkari Department pulling LORD MORLEY's legs?

We understand that the Hospital Assistants in Madras have held a protest meeting and passed resolutions. Well, that is a beginning. But, if we may advise the private Hospital Assistants and others who are affected by these regulations, we would ask then to get printed in parallel columns the 'Independent Medical Profession' despatch of LORD MORLEY and the Cocaine Regulations of the Madras Board of Revenue and present a copy to LORD MORLEY. We understand that some of the private Hospital Assistants are going to England soon. Why not they form a deputation and wait on the Secretary of State? LORD MORLEY is a philosopher. But we are certain that his Lordship will enjoy reading the Cocaine Regulations of the Madras Board of Revenue. Who knows that LORD MORLEY may not delegate the task of developing an independent medical profession in India to our Abkari Department?

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Original Articles.

* HYOSCINE-MORPHINE NARCOSIS.

BY

J. BERNARD DAWSON, M.B., F.R.C.S.



HE method of hypodermic administration of hyoscine and morphine for the induction of partial or complete narcosis was first introduced by Schneiderlin in 1900 and since then has been increasingly utilised both on the continent and in this country.

The leading advocates abroad are Korff, Kummel and Kronig, at whose clinic at Friburg many instructive statistics have been compiled.

In Great Britain the system has found its most ardent exponents in J. Halliday Croom of Edinburgh, R. C. Buist of Dundee, H. McNaughton Jones of London and C. Leedham Green of Birmingham, but to the majority of the profession the possibilities of this additional anæsthetic are as yet little known.

In order that there may be no confusion between the two drugs scopolamine and hyoscine, I should like to detain you a few moments with the chemical aspect of these drugs.

Although clinically the two alkaloids are interchangeable without any difference in results and although text books upon therapeutics regard scopolamine merely as a synonym for hyoscine, yet there is a difference which has some interest from a clinical standpoint.

* A paper read before the York Medical Society and sent to the 'Antiseptic' for publication.

Scopolamine is an alkaloid isomeric with cocaine and together with hyoscine is derived from the pyridin nucleus.

Hyoscine is isomeric with atropin and in fact hyoscine, by treatment with bases, can easily be induced to undergo a molecular change into atropine. The difference between scopolamine and hyoscine is a rule, the presence in commercial hyoscine of a mydriatic alkaloid known as atroscine.

The interest of all this somewhat dull chemistry lies in the close chemical similarity between hyoscine and atropine. It is common practice to administer atropine with morphine, the purpose presumably being to lessen the tendency of the morphine to produce gastric derangement. Now although hyoscine is very different in its therapeutic action from atropin yet the presence of atroscine enables the drug to act as a partial antidote to morphine in the same way as atropine.

An obvious disadvantage, due to the presence of atroscine, is the initial excitation produced by hyoscine; this is, however, usually counter-balanced by the presence of morphine.

Of morphine, 1 of the 18 alkaloids found in opium, it is unnecessary to make any comment.

The Therapeutic Aspect.—Hyoscine, after the initial excitation due to the atroscine, acts as cerebral and spinal depressant and sedative but also has the important property by which the activity of the terminations of all nerves is depressed.

Morphine, on the other hand, acts essentially as a depressant of the higher centres, the spinal centres being little affected, whilst the excitability of motor and sensory nerves is unaffected by therapeutic doses of morphine.

The pupils are affected in an irregular way and afford little guide to the patient's condition; this is due to the simultaneous administration of a mydriatic drug atroscine and a myotic drug morphine.

The Clinical Aspect.—The use of hyoscine-morphine injections is the outcome of efforts to obtain a drug or combination of drugs which would produce a state of narcosis.

At the first inception of this method it was hoped that a complete anæsthesia might be obtained; this was not found possible, but a state of anæsthesia sufficiently profound to render inhalation narcosis unnecessary for certain cases can be easily induced.

The use of hyoscine-morphine narcosis is now advocated for two purposes:—

1. To induce partial anæsthesia during labour.
2. As a preliminary to inhalation anæsthesia.

1. *Hyoscine-Morphine Narcosis in Labour.*—As an introduction, I cannot do better than quote the words of Professor Kronig of Friburg:—

"I believe that, though it has met with so much opposition, that wonderful narcotic scopolamine, given in conjunction with morphine, surpasses every other hitherto applied, introduced into surgery by Schneiderlin and Korff, and by Steinbuchel into obstetrics. Scopolamine adapts itself, according to my conviction, because, given in combination with morphine in small doses which are innocuous to mother and child, it possesses, besides its analgesic action, the beneficial quality of producing prolonged interruptions in our mental associations. Hence the result of these interruptions is that impressions fade from the memory of individuals after the administration of scopolamine. The peculiar mental condition produced in women by small doses of this narcotic, not injurious to mother and child, we have named 'Dammerschlaf,' a term which signifies that the patient is lulled into a sleep verging upon unconsciousness."

Apparently the English word "drowse" best expresses the condition described above. The most important factor in the successful use of this method is correct dosage.

The initial dose generally advocated is—

Morphine Sulphate gr. $\frac{1}{8}$, with

Hyoscine Hydrobromide, gr. $\frac{1}{100}$.

This injection is made when the patient has pains lasting at least 30 seconds and which recur in regular intervals of 4 or 5 minutes.

At the end of $\frac{1}{2}$ an hour the effect begins to become manifest, the patient becomes sleepy, slumbers during the intervals betwixt the pains, awaking and manifesting her suffering when the pains occur.

As a rule consciousness is not lost, and one hour after the first a second injection is necessary. This consists of $\frac{1}{100}$ to $\frac{1}{200}$ of a grain of Hyoscine Hydrobromide; $\frac{1}{2}$ an hour after this has been administered, it is necessary to test the patient's perceptive faculties. This is best done by showing her between the two injections some familiar object associated with the confinement, and again showing this article at intervals after the second injection; when the patient fails to realise that she has seen the object before the state of amnesia is sufficient.

These doses are, of course, merely average; workers with this method adopt varying formulæ, and patients themselves react in a variety of

ways to the same dose. Again the additional dose of hyoscine may not be necessary, whilst in some cases yet another or third injection of hyoscine may be needed.

The ideal state of semiconsciousness or "dawning-sleep" should be such that the patient awakes for a short time during the pains; She manifests her distress, but falls asleep again as soon as the pain ceases. The pain is momentarily perceived so that this condition cannot theoretically be placed in the same category as the complete insensibility produced by inhalation narcosis.

But, in practice, there is to be considered the additional fact that the patient awakes post-partum perfectly happy and declares that she has felt nothing. Occasionally the excitation produced by hyoscine may be unduly manifest, and if so the second injection should contain $\frac{1}{8}$ of a grain of morphine; in fact if the state of subconsciousness seem good this injection may consist of morphine alone.

The surroundings of the patient influence the success of the method being considerable; thus the workers in this method of anæsthesia have found that they obtain better results with patients confined in the seclusion of their own rooms than they do with patients of a lying-in institution. Disturbed surroundings combined with the hyoscine seem to produce some excitement.

Before any such method as this can find general approval it is obvious that the profession must be satisfied upon the following points:—

1. Is the maternal mortality affected?
2. Is the incidence of the complications of labour increased?
3. Is the infant mortality affected?
4. Is the patient likely to approve of the method?
5. What are its *contra-indications*?

1. *The Maternal Mortality.*—I have been able to collect statistics of some 1,857 cases consisting of those occurring in the ordinary routine of hospital and private practice, including both primiparæ and multiparæ and without any selection whatever.

According to Galabin the average mortality from childbirth is about 3%. These figures were stated 10 years ago, so that in all probability they exceed the present percentage considerably.

In the 1,857 cases of women confined under the influence of scopolamine-morphine narcosis there were 2 deaths, one from rupture of the uterus dependant upon a greatly contracted pelvis, and the second from

fatal hæmorrhage in a case of placenta prævia. This gives a mortality of only. 108 or $\frac{1}{8}\%$.

2. *The Incidence of Child-Bed Complications.*—Both the opponents and, exponents of this method of narcosis are agreed that the only complication which the administration of hyoscine and morphine is likely to affect is that of hæmorrhage both during and after labour. It is stated that the uterine muscle is rendered somewhat atonic by these drugs.

If we again examine the examples before us we shall see how far this fear is justified.

Professor Krönig has been so successful that he has not met with any severe hæmorrhage at all; in fact he states:—"If other authors mention numerous instances of atonic hæmorrhage after confinements under scopolamine injections, we can certainly attribute them to incorrect dosage. We continually measure the loss of blood in the period of the after birth, and it has always been proved that this loss does not surpass the physiological quantity. Other obstetricians have experienced disturbing hæmorrhage in 5 cases, none of which, however, proved fatal.

Thus in 1,857 cases there have been 5 cases of P.P.H. This gives a percentage incidence of 27 or $\frac{1}{4}\%$. It is difficult to obtain any reliable figures with which to compare this percentage, but in any case the occurrence of one case of P.P.H. in 400 cases and of no fatal case in 1,857 cases must be considered very satisfactory.

3. *The Infant Mortality.*—Opponents of this method state:—

- (1) That the infant mortality is increased.
- (2) That a certain number of those who survive are mentally affected in later life.

(1) Krönig has plainly shewn by statistics that the deaths intra partum have been diminished by the use of hyoscine-morphine narcosis. In 500 cases there was 1 death of an infant during parturition and 3 deaths within 3 days of the birth. This is attributed by Ashoff to the moderate inactivity produced in the infants' respiratory centre by the hyoscine and morphine, so that slight disturbance of placental circulation and small accumulations of CO₂ in the blood do not at once induce premature intra-uterine or intra-vaginal respiration. The air passages remain clear and even in slight asphyxiation, prompt and more certain revival can be expected.

(2) It has been conclusively shown that any hyoscine in the new born infant's system is totally eliminated in a few hours. How then is it reasonable to suppose that a trifling non-toxic dose of this drug, which is

rapidly eliminated, can produce mental deterioration years later? Such a proposition is contrary to therapeutics and to common sense.

On the other hand there is some justification for the complaint that the number of children who need resuscitation or artificial respiration is increased by the hyoscine-morphine method.

Krönig's experience was that 10 in 100 of the children exhibit *oligopuoria* or *asphyxia neonatorum*. These, he states, recover if left alone, and in any case react rapidly to simple methods such as massage and other external mechanical stimulation.

4. *Do the Patients Approve of this Method?*—This question I propose to answer by a few quotations:—

(a) "It frequently happens that women awake post-partum perfectly happy, declaring that they felt nothing, not believing that they have a child which they may call their own."

(b) "One patient had so little memory that although she was in hospital 4 hours before delivery she said that she felt only two pains after admittance."

(c) "Women who have gone through several previous confinements without hyoscine, and this time with it, invariably admit that their general health is very much better and that they have no feeling of exhaustion whatever."

5. *What are the Contra-Indications?*—These are merely those indicated by common sense:—

(1) In cases where the pains are feeble and ineffective the administration of hyoscine and morphine is best omitted or delayed.

(2) In constitutionally weak women the dose needs regulation and the effects careful watching.

(3) Organic heart trouble and pulmonary affections offer no barrier to the use of these drugs; in fact by dulling the mental distress they probably render a confinement associated with these troubles less disturbing.

To my mind this brief survey of the use of hyoscine and morphine as a method of producing amnesia and narcosis during labour offers several important advantages. Thus Buist states: "Whenever your patient is distressed by the pains and you expect labour to last more than an hour, give an injection of hyoscine and morphine; if you expect it to last a considerable time, return in from 3-4 hours' time and, if necessary, repeat the injection. The second dose may be of morphine alone, or of

hyoscine alone, or of both, as you think necessary to reproduce the mental condition you desire. If you think from examination that the contractions are really violent, lay stress in the morphine; if you think that the patient is reacting excessively to what contractions she has, emphasize the hyoscine."

It is difficult to estimate the advantages in private practice of a method which, while allowing labour to progress regularly, relieves the patient of her suffering and releases the medical attendant from the necessity of regular attendance.

Particularly is this the case in country work where the doctor is often single-handed. To look at another aspect of the case, it cannot be doubted that the physical and mental strain of a prolonged and painful confinement produces phenomena in women of a delicately-balanced nervous control, that leave their mark for many years if not for the rest of life. Therefore any system of narcosis which minimises the mental stress should be welcome in these days of increasing functional nervous disorders.

Hyoscine-Morphine Narcosis as an Auxiliary to Inhalation Anaesthesia.—The very satisfactory results which attended the use of this method in obstetric work naturally roused the interest of surgeons in general, so that now there are many who advocate its use in all operative procedures where there are no definite contra-indications.

In fact it has been proved possible in some cases to complete formidable surgical interference without any inhalation anaesthesia whatever. Thus, Zadro reports that it was found possible with one injection and the additional use of a local anaesthetic to carry out—

5. Resections of stomach.
4. Gastro Enterostomies.
2. Gastrostomy.
1. Colostomy.

The patients were quiet, free from pain, bore the operation well, and on the next day had no remembrance of the operation.

Though usually, however, it is necessary to give some inhalation anaesthetic, yet the advantages which can be justly claimed for this use of hyoscine and morphine are:—

(1) The reduction to a minimum of the anticipatory dread and anxiety prior to and upon the day of operation.

(2) The quiet reception of the chloroform or other anaesthetic; the absence of fear of sense of suffocation.

3. The small amount of inhalation anæsthetic needed. Thus, an operation of one hour's duration—

Without injection of H-M. { Mixture 60 grams.
Ether 100 grams.

With injection { Mixture 25 grams.
Ether 80 grams.

4. The tranquil course of the anæsthesia which proceeds quietly without asphyxia, collapse, vomiting, salivation or tracheal-hyper-secretion.

5. The freedom from post-operative complication:—Thus, 5,031 operations show —

	With Injection	Without Injection
Vomiting	{ 19.2 % 11 % occurred late and was thus less dangerous.	33 %
Post-Anæsthetic Pneumonia	9 %	3.3 %

This is accredited to the action of hyoscine in lessening secretions of sputum and mucous and in preventing vomiting so that aspiration occurs less frequently and an accumulation of bronchial secretion is prevented.

I propose now briefly to outline the method of use of hyoscine and morphine in this connection, but like all other schemes this must be only an average which needs modification and amendment for individual cases.

The night before the operation the patient is given 10 grains of Veronal in order to ensure a good night of unbroken sleep. (Some operators prefer to give an injection of hyoscine $\frac{1}{16}$ gr. with morphine $\frac{1}{8}$ gr. instead of the Veronal).

Then $1\frac{1}{2}$ hours before the operation a subacute injection of morphine $\frac{1}{8}$ gr. with hyoscine $\frac{1}{16}$ gr. is given. The room is darkened and the patient told to go to sleep. The effect of this is to produce a pleasant drowsiness in which all fear of the impending operation is lost. Usually the patient falls into a sleep from which he can be momentarily roused, only to fall asleep again when the disturbance has ceased.

If at the end of one hour the patient is neither asleep nor very drowsy another dose morphine $\frac{1}{8}$ gr. with scopolamin $\frac{1}{80}$ is given.

For women and weakly patients, the dose may be lessened, whilst for strong men the second dose may need to be increased.

To summarize the advantages of this combined morphine-hyoscine inhalation anæsthesia, permit me to quote from a paper read at the B. M. A. meeting of last year by Mr. Leedham Green:—

“1. The patient is spared much nervous tension whilst being prepared for and awaiting operation.

2. He is already drowsy when the general anæsthetic is administered; consequently the full narcosis is quickly and easily obtained without distress.

3. The amount of ether or chloroform required is greatly reduced.

4. Full anæsthesia with perfect muscular relaxation is quickly obtained and easily maintained. Moreover, there is no sudden passage from full to semi-anæsthesia with its accompaniment of struggling on the part of the patient.

5. The secretion of mucous is lessened and consequently the administration of ether facilitated with diminished risk of post-operative pneumonia.

6. Absence of vomiting.

7. The operation is followed by a long and graceful sleep.

8. Increased safety.”

It will, doubtless, be asked if there are no disadvantages or dangers associated with this seemingly ideal narcotic combination. There are apparently none of great moment, the greatest being the risk of administering too much of the general anæsthetic and so affecting dangerously the respiratory centre which is already depressed by the hyoscine. Dr. Dudley Buxton says in relation to this:—

“The utmost care is necessary to limit the amount of chloroform used, and as very little is really needed, this is readily done, especially if a regulating inhaler is used. The patient should not be pushed to the depths of chloroform narcosis essential when that anæsthetic is used alone, and the danger arises for paralysis of the respiratory centre. Fortunately the gradually deepening narcosis, the lessening of depth of respiration, with the duskiess of colour that appears, give timely warning of any peril.”

This, ladies and gentlemen, is briefly the scope of this new method of inducing narcosis for surgical and obstetrical purposes. I must thank you heartily for the patience with which you have listened to this paper which is nothing more than a collection of opinions and results already published.

DIAGNOSIS OF VALVULAR DISEASES OF THE HEART.*

BY

MR. A. M. MASILAMANI MUDALIAR, L. M. & S.

Asst. Supt. and 1st Instructor, Rayapuram Medical School.

CHAIRMAN, LADIES AND GENTLEMEN,—

In these days of journals and books, orations and lectures, volumes and volumes of information have accumulated on heart diseases. My attempt to do anything worthy of consideration in such a thick field is bound to end in disappointment not only to you but to myself also.

Two gratifying features there are, in the prospective disappointment. One is that through your kindness, fully 22 years after I passed out, I stand here under the roof of my *Alma Mater*, and under its auspices I hope to achieve the object of entertaining the members and guests of the Madras Hospital Assistants Association.

Whatever may be the outcome of my attempt, there is another satisfaction that I am fortunate enough to be given this rare honour of appearing in this gathering presided over by Surgeon-General Benson who I know, with his usual kindness, will treat me indulgently. There is one thing of which I am fully convinced and that is what one has to learn yet can fill the world and what one has already learned is but a handful :—

“கற்றதெல்லாம் கைமண்ணளவு
கல்லாதது உலகளவு.”

Kindly bear with me and allow me to speak freely as a teacher would do to his pupils, for I know no other method of presenting my ideas.

You would excuse a little digression.

Let me say a few words on the difficulties in diagnosis in general.

They arise from three sources according to the article in *The Practitioner* for the month of September 1909 by A. I. Hall, M. A., M. D., Lecturer on Practical Medicine, University of Sheffield :—

1. Insufficient knowledge.
2. Insufficient experience.
3. Insufficient data.

The three difficulties he mentions we are supposed to have fully overcome—should any such difficulty be felt, it is repairable only by undergoing another course of study all over again.

* A lecture delivered at the Annual Conference of the Madras Hospital Assistants Association held on 16th April 1910, and sent to *The Antiseptic* for publication.

Further he says: “With experience come the mistakes due to (1) over-confidence, (2) hasty diagnosis or (3) careless examination.” If I am allowed to put matters more plainly I would say that for diagnosis: First, a good foundation of Anatomy and Physiology is absolutely necessary. Secondly, a careful study of the physical condition of normal hearts, say 100, before ever attempting to test any abnormal or diseased heart. These 100 hearts must be methodically studied under the heads of—Inspection, Palpation, Percussion and Auscultation.

There are variations among healthy hearts.

One healthy heart is not exactly similar in every way to another healthy heart. We should familiarise ourselves with these variations which are not actual diseases. Health is separated from disease not by a border line but by a border land, and that land must be thoroughly explored by repeated observations. Without such an experience it is useless to attempt a clinical study of any organ. I must say, though it is as discreditable to me as it is to the present day student, that this method of studying normal hearts (this remark applies to other organs and systems where physical examination is possible) has been, and is being very much neglected by the medical student. He goes into the medical ward and rushes at once to examine with his stethoscope, very often, a mitral regurgitant murmur, or a crepitation over the lung, and that perhaps is his very first, the really first clinical feat. How often he is reminded of the examination of healthy hearts, lungs, &c., and how easily he infringes this golden rule are only known to teachers.

Yet how reasonable and beneficial it is to make a thorough study of normal organs first and then how easily and logically one is led to diagnose diseased condition! It may take a student to conduct a methodical physical examination of one hundred normal hearts two months. In two hours he can be taught all the physical signs of a pathological state—at any rate all the valvular diseases. If the thorough and searching examination of a normal heart is not made, all the clinical knowledge that he obtains will consist of very scattered pieces of information with which he will never successfully weave a diagnosis. He will be wavering and uncertain.

Another mistake that is generally made is to use the stethoscope for the heart and employ no other method of physical examination. Depending entirely on the stethoscope is to make fatal mistakes; for with it, only murmurs or abnormal sounds are detected. There may be twenty and one abnormal sounds heard over a healthy heart and this is perfectly true.

Inorganic murmurs are more common than murmurs the result of valvular diseases of the heart.

In the *British Medical Journal* dated 10th October 1908, Dr. J. Edward Squire, Physician of Mount Vernon Hospital for Diseases of the Chest, has written a very interesting article on "Exo-cardial Murmurs often Misinterpreted." In the course of it the following passage occurs:—

"A diagnosis of heart disease, as we know, should not be made from the presence of a murmur alone. Full examination of the size and position of the heart and condition of pulse and indications of circulatory disturbance should be investigated. In busy practice there is, however, a temptation to rely unduly on the condition of the sounds of the heart."

Thus the stethoscope, in which the student believes he has the best means of fully diagnosing, actually leads him astray. There are to-day many such stethoscope-made valvular diseases.

Give the stethoscope its due place, but no more. Where are the other three methods of physical examination? Where are the symptoms, where is the history of the case, where are the general physical signs such as physiognomy, pulse, respiration, decubitis, general condition, &c.? Do all these facts count for nothing against the one single, whimsical and erratic music elicited by the too highly priced stethoscope?

[The lecturer then proceeded to impress on his audience the importance of bedside clinics as opposed to "outside clinics", such as microscopical work, X-rays, tuberculine tests, &c., and quoted from Mr. Edward Owen in support of his contention and then proceeded]:—

Now about my subject of the evening my plan is to examine, at the outset, all the possible difficulties, doubts and misconceptions that might arise in the course of our diagnosis of the valvular diseases of the heart and then it should become easy to differentiate the principal valvular diseases. Those conditions or diseases which might act as sources of error may be eliminated first. Once we have discussed them at length and once we keep them in view our task should be easy. In short I have adopted the plan of "diagnosis by exclusion." Such possible sources are arranged under the following heads:—

- | | |
|---|----------------------------|
| 1. The exercise of great scrutiny and care in the collection of symptoms. | 1. The anæmic heart. |
| 2. The weak hearts. | 2. The neurotic heart. |
| 3. The kidney heart. | 3. The alcoholic heart. |
| 4. The atrophied heart. | 4. The febrile heart. |
| 5. The pulmonary heart. | 5. The post-febrile heart. |
| 6. The dislocated heart. | 6. The athletic heart. |
| 7. The adherent heart. | 7. The senile heart. |
| 8. The inorganic murmurs. | |

Altogether 12 hearts and 14 items which ought to be excluded.

1. "The symptoms are often of the greatest clinical importance, and long experience is required to estimate them at their proper value."—*Poynton*.

They must be carefully collected. The mistake that one easily commits here, as he does in other diseases also, is to conjecture a diagnosis at a very early stage of the investigation, while he takes the history or even at the first sight of the patient, and then to confirm the conjecture by manufacturing symptoms and signs that would easily fit in.

This artificial production I call not diagnosis but "a preposterous shuffling" fit only for a gambling house. Nothing in the course of your investigation shall prejudice your minds towards a particular disease, but you shall hold the balance quite even and free and gather all the clinical evidences that are available.

Do you not know that you are to collect the *pros* and *cons* of the case and then pronounce your judgment? How can you hope to discharge such a high office justly, if at the threshold you hopelessly manufacture some or ignore other evidences? Be cool and collected and make your collection of facts. Your diagnosis, even if it should be a negative one or should prove a thorough failure, will still be entitled to every respect on account of the honesty and lucidity of the method and manner of your investigation. Cardiac pain and tenderness, cough and dyspnoea, attacks of palpitation or syncope, anasarca and anæmia, digestive and nervous symptoms, the age and history—all these afford valuable evidences in valvular diseases. Information must be sought for on every point. Negative or positive, evidence is evidence.

2. There are what are known as "weak hearts" without any particular valvular disease, *vide*, an interesting article on this subject in *The Practitioner*, November 1907, by Gordon Lambert. The diagnosis of fatty fibroid degeneration cannot be made with certainty and such is the case with impairment of functional activity.

"In all weak hearts one or more of the following factors contribute to produce morbid effects:—

1. Morbid conditions of the cardiac muscle cells, impaired functional activity, degeneration.
2. Deficiency in quantity or quality of general blood stream.
3. Degenerative changes in the arterial system, particularly in the aorta and coronary arteries.
4. Derangements of nervous control by the cardiac centre and nerves."

He again makes a profitable classification, that is a clinical and practical classification, as follows. I have made an abstract of the article with just one or two alterations :—

The anæmic heart.—Breathlessness an early symptom; palpitation and precordial distress are present.

Signs.—Weak and diffuse impulse and the heart dilates soon.

Hæmic bruit, venous hum, mitral systolic murmur due to regurgitation; right ventricular dullness may be distinct.

Is this valvular disease of the heart? A simple answer—no this is not organic valvular disease.

Yet mark the dilated condition, the murmur, &c., all simulate an organic disease to perfection.

2. *The nervous or the neurotic heart.*—This forms a very intricate and large subject and its causes are very many.

The symptoms are also varied. Dilatation is present in some cases. In these cases, the heart would be found to form a part and parcel of the general nerve condition to which attention should be directed. The heart of the hysterical subjects of neurasthenia, of nervous irritability and of various other neurosis producing arrhythmia, bradycardia, tachycardia, should be borne in mind. The following paragraph from Broadbent speaks for itself:—"A common cause for dilatation of the heart is anxiety. Nothing is more certain than the influence of prolonged mental depression on the heart and the sensation of aching, oppression and weight which attends grief and anxiety and which was considered to point to the heart as the seat of emotion generally, is indicative of an injurious effect upon this organ. It is almost literally true that people die of a broken heart."

The alcoholic heart.—Fatty degeneration of the myocardium is the ultimate result. The natural decay to atheroma is hastened and there may be early present the troubles due to atheroma of aorta and coronary arteries and arterio-sclerosis.

"The alcoholic has a 'flabby' heart in a 'flabby' body. The heart's impulse is diffused and feeble, the apex beat is often displaced outwards, less by hypertrophy than by dilatation. Slight exertion is sufficient to cause dyspnoea, precordial distress, intermittent and irregular action of the heart."

Febrile and post-febrile hearts.—In all acute specific diseases, the toxins attack the heart muscle and very soon the myocardium becomes

weak and in some cases becomes permanently so. Some patients can date their heart weakness from the time of an attack of influenza, small-pox, cholera, typhoid fever, rheumatic fever, &c.

In typhoid fever and in rheumatic fever this can be easily demonstrated.

In the very interesting article on "The Early Signs of Rheumatism of the Heart", by Dr. Gossage, published in *The Lancet* dated August 21, 1909, he argues out that myocarditis is more or less invariably associated with endocarditis and that it is due to the toxins circulating in the blood. The cardiac muscle loses tone and lends itself to dilatation. But a general rule which can with safety be adopted is that in all cases of acute specific diseases the myocardium is in great danger.

A weak first sound, an apical systolic bruit, diffuse impulse, displaced apex, enlarged heart and a dirotic soft pulse are all sufficient indications.

Is this valvular disease? No. No one would say so.

In the *post-febrile weak hearts* "comparatively slight muscular exertion induces dyspnoea." On examination the heart's impulse is found to be weak or not palpable. The first sound clearly resembles the second sound in both duration and character.

Less numerous are cases in which definite symptoms of cardiac failure have appeared during convalescence and have recurred at intervals.

"Cardiac dyspnoea and oppression over the pre-cardium are complained of, the apex beat is displaced outwards, epigastric pulsation is present and percussion dullness to the right of sternum is increased. An apical systolic murmur is audible and is conducted outward. Such are the clinical signs during an attack of cardiac failure."

The atheletic or strained heart, that is, "in which the strain of the heart has been caused by physical exertion too severe or too prolonged for the strength of the individual."

Such I have observed in athletic school boys, in cyclists and others. "Chronic hypertrophy and dilation are among the possible results enumerated." Enlargement and murmur are present in an otherwise healthy subject whose history interestingly demonstrates how steadily this condition arose and how the individual was beginning to feel he could not persist in the exercise to the same degree as previously.

We must remember that the heart is naturally the first organ that is likely to be temporarily or permanently damaged by too much exercise.

In the excellent paper on "Medical Aspects of Athleticism" by TYRRELL BROOKS at the last annual meeting of the British Medical Association held at Belfast, he points out that in athletes the cardiac area on percussion is abnormally large.

Sir CLIFFORD ALBUTT made the following remark:—

"If sharp exercise be taken by boys or undergraduates shortly after an infection the heart was very liable to suffer."

How easily in these cases one would diagnose valvular disease and how mercilessly would such a diagnosis influence his employment and future prospects?

He may be pronounced unfit for any kind of work if proper care is not exercised.

All that is required in these cases is to put a dead stop to all exercises and to give the heart sufficient rest to recover itself and then prescribe, if necessary, exercise in moderation.

The senile heart.—It is an old saying "A man's myocardium is as old as his arteries."

Degenerative changes set in and there is enlargement of heart. A big but weak heart is the result. Left ventricle may fail and symptoms of secondary or relative mitral regurgitation develop.

These are just the cases which are often mistaken for mitral regurgitation. The very age of the patient must be a sufficient and sure guide to suggest the senile heart.

Of course aortic valvular disease does occur when the degenerative changes take place at the aortic ring where the valves are attached.

Gout, syphilis, arterio-sclerosis hasten their occurrence. Muscular overstrain and persistent high pressure are also factors. These are the conditions in which the degenerative changes begin in the aorta just above the valve ring, and extend to the valves. Then it is actually valvular disease, no doubt, but I am here referring to the condition preceding the actual invasion of the valves when there is some dilatation of the aorta and a systolic murmur stands as the only clinical evidence. At this stage I hold that the valve is not diseased.

An aneurysmal dilatation should be also borne in mind. Besides this, there are functional murmurs heard here.

On the whole senile heart should be looked upon with much suspicion and looked into with more care. The degree of degeneration and of dilatation must be estimated. Advanced age.—Aortic atheroma,

—Aortic valvular disease,—Aneurysmal dilatation,—and Angina Pectoris. —These 5 conditions are all associated dangers mixed in some proportion or degree. I have put them together for conveniently remembering them.

After describing the "weak hearts" I beg to quote the valuable words of Broadbent:—

"Too commonly, however, no attempt is made to recognize the existence and extent of degeneration or dilatation. The symptoms due to the derangements of the circulation, force themselves upon the attention of the medical man, but no murmur being detected, the only diagnosis ventured upon is that of "weak heart," a vague term which covers the entire ground, from temporary functional debility to disease inevitably and imminently fatal. Such a diagnosis reacts unfavourably upon the mind of the observer who rests upon it, and makes him less exact and trustworthy, while it may be full of danger to the patient."

Kidney heart. Not far removed from one kind of senile heart, though caused by an entirely different condition the high-tension pulse of chronic Interstitial Nephritis, is the Kidney heart. Left ventricle hypertrophies, apex is displaced—relative mitral regurgitation, and later, right ventricular hypertrophy, set in. After a time the right ventricle fails.

A large heart, a large liver, large legs and a large abdomen complete the picture of what is generally taken to be "valvular disease of heart (mitral regurgitation)". The valves are absolutely all-right. Then what right has anybody to suppress the right name which is interstitial Nephritis. This mistake results from neglect to examine all the organs in any disease.

The "Wasted" or atrophied heart of wasting diseases like Cachexias must also be remembered. How easily circulation fails and œdema sets in in all such cases! These may show dilatation, murmur, &c. Certainly this is not valvular disease. Myocardial atrophy or degeneration is the pathology. The heart is bearing its share in the general emaciation.

The Pulmonary heart. In diseases of the lungs or the pleura which offer an obstruction to the course of the blood in the pulmonary circulation, that is, to the passage of the blood from the right ventricle to the left ventricle, right ventricle becomes enlarged (hypertrophy and then dilatation). Compensation is kept up for some time only to be followed by failure and its attendant symptoms and signs similar in every respect to the later stages of mitral regurgitation. Such diseases of the respiratory system are Emphysema of the Lungs, pleural effusions, etc. In these there is no valvular lesion at all and a casual observer is sure to go wrong. Here is yet another paragraph from Broadbent. "A mitral systolic

murmur means regurgitation. It does not however necessarily imply that there is actual disease of the mitral valve, as there are other causes which may give rise to mitral regurgitation from the dilatation of the left ventricle or stretching of the mitral orifice."

Dislocated heart. By this I mean a heart pushed out of position by effusion into the pleura, pleuro-pericardial adhesions, etc. I have seen a case of displacement which was shown to me as 'mitral regurgitation.' A young person of about 16 years of age with great orthopnoea and odema of feet. The impulse was felt outside though still in or a little above the fifth interspace which at once raised my suspicion. The forcible right ventricle and the epigastric pulsation were absent. There was abnormal pulsation over the precordial region which did not appear enlarged. There was not enough evidence of mitral regurgitation with failure of compensation. A close inspection of the whole chest gave all the clue to diagnosis.

There was no doubt a distinct murmur systolic in rhythm, apical in intensity and conducted towards the axilla. The murmur was the unfortunate one elicited by the deplorably unclinical habit of auscultating and auscultating only that had entirely and most dangerously deceived. Further examination proved the existence of a large quantity of fluid in the right pleural cavity having caused a left lateral displacement of the heart. Paracentesis brought back the heart and the symptoms of the so called mitral regurgitation vanished.

I was deeply impressed with this case and I have ventured to mention the possibility of such a mistake.

Any condition that increases the acuteness of the curve of the aorta develops a murmur.

Adherent heart: that is heart with pericardial adhesion. There may be internal or external adhesions or both or they may be mere thickening of the pericardium without adhesions.

"The usual results are dilatation and hypertrophy of the heart."

In summary it may be stated that an adherent pericardium

1. may be latent;
 2. may produce dilatation and hypertrophy;
 3. may produce atrophy of the heart;
 4. may produce local compression of the auricles one or both;
- Poynton.*

Here the valves are not damaged. But you will see from symptoms and signs how well it simulates valvular disease. In fact I may at once

say that all these cases whether they exist or not as such, are treated by us as valvular diseases, for, they cannot possibly be differentiated unless the cases were under our observation from the commencement, *i.e.*, from the time pericarditis set in. Enlargement of the heart and murmurs are the prominent features. Such signs, as an apex fixed in the wrong place, systolic retraction of lower end of sternum and adjacent cartilages, systolic recession at apex, which are the result of pericardial adhesions to the neighbouring parts are rarely found. Pain, palpitation, dyspnoea and other symptoms are present. Anyhow practically they are for all purposes as good as valvular diseases.

8. Inorganic or functional murmurs.—Need I repeat that a murmur by itself is the most useless evidence of the disease of the heart.

In debility and anæmia a pulmonary systolic murmur is common, very common; such a murmur is present even in very healthy individuals. It becomes audible in some on exertion. We cannot possibly explain why it is present.

Less commonly there are heard aortic systolic and apical systolic murmurs in quiet healthy individuals.

To quote Broadbent again: "Mere roughening of the orifice or valves or impaired flexibility of the latter, slight congenital malformation, fenestration of one or more of the cusps, a shed of fibrin hanging from the edge of a wall, may give rise to a loud systolic murmur without offering obstruction to the course of the blood."

Broadbent.

The inorganic murmurs are very accidentally discovered. Fortunately these murmurs have some peculiarities of their own.

Pulmonary, Mitral, Tricuspid and Aortic is their order of frequency.

To be faint, and blowing, to be heard over a large area, to be conducted in no known direction and not beyond the precordia is their character, to be systolic is their rhythm. No hypertrophy or other structural change; no change in the pulse; no accentuation. They are transient and fleeting murmurs changing with position, with exercise with rest and with treatment.

Add to these a carefully recorded history, the picture is as plain as daylight and that is, that a perfectly healthy heart may sing away only to mock and deceive those who suffer from stethoscope-mania.

The number of such heart with no lesion of the valve but with nearly all the usual apparent evidences of valvular lesion is not exhausted. Yet I have endeavoured to show a large number of them sufficient to make us think twice before we stamp a valve as damaged.

*TABLE OF V. D. H. (5 principal ones.)

	Inspection.	Palpation.	Percussion.	Auscultation.	Other particulars of importance.
A.O.				1. Systolic murmur. 2. Best heard over aortic area. 3. Conducted upwards into the carotid arteries.	Pulse—small, slow, hard and regular. Patient generally aged. Look for kidney disease, etc., causes of high tension pulse. Attacks of giddiness and of angina.
A.R.				1. Diastolic murmur heard with 2nd sound. 2. Best heard over aortic area. 3. Conducted downwards along sternum.	'Water-hammer' or Corrigan's pulse. Throbbing of arteries of neck. Attacks of giddiness and of angina. Beware of sudden death from syncope.
M.R.				1. Systolic murmur. 2. Best heard over mitral area. 3. Conducted into axilla and audible at the angle of left scapula.	Symptoms of failing compensation due to dilatation of R. V. and congestion of organs. 1. nutmeg liver, 2. hard spleen, 3. kidneys large, hyperæmic—scanty and albuminous urine, 4. congested stomach—dyspeptic symptoms, 5. dropsy beginning in the feet then ascites, 6. cyanosis, 7. congestion of intestines—flatulence, piles, hæmorrhoids, diarrhoea or constipation, 8. congestion of brain—headache, giddiness, sleeplessness, delirium, etc., 9. congestion of lungs—shortness of breath, cough and in later stages brown induration of lungs, 10. Pleural effusion.
M.O.	Abnormal pulsations.	Pre-systolic thrill in early stages; apex beat not displaced to the left unless there is regurgitation also.		1. Pre-systolic murmur. 2. Best heard at the apex. 3. Limited to a small area.	Pulse—small and hard till compensation fails. Later on M. R. symptoms are added.
Congenital heart disease. (Pulmonary obstruction generally.)		Later on enlargement of R. V. (hyp. and dil.)		1. Loud and rough systolic murmur. 2. Best heard over the 3rd or 4th interspace close to left of sternum. 3. Audible over the whole præcordia & the whole length of the sternum. Not propagated into the carotids.	Extreme cyanosis. Dyspnoea. Extreme coldness of extremities. Temperature low. Clubbed fingers. Headache. Convulsions. Dropsy and congestion of viscera as a result of failure of compensation.
		Hypertrophy and dilatation of R. V. Irregularly 'square' heart.			
		Forceful impulse, palpable and visible pulsation over cardiac area.			

*From "A Clinical Guide for Medical Cases" by A. M. M.

† "No careful observer who has devoted much attention to the study of mitral stenosis has failed to notice that the pre-systolic murmur is sometimes absent in cases in which an advanced stage of this condition is met with after death. The principal justification, however, for taking the disappearance of the pre-systolic murmur as a distinct stage in the clinical history of mitral stenosis is that, very commonly when pulmonary complications set in, or other serious symptoms arise, the presystolic murmur is lost, and that it again becomes audible when these subside and the patient improves."
(Broadbent.)

Ladies and Gentlemen, now having indicated the many pit-falls that are present in our path, you will please permit me to point out that the principal valvular diseases we should practically know are obstruction and regurgitation at the aortic orifice, and obstruction and regurgitation at the mitral orifice.

The congenital valvular disease of the heart, in other words pulmonary stenosis, may be added to the list and a tabular statement of their differential diagnosis as given in the previous page, I hope, will be of use.

Our Contemporaries.

MEDICINE.

Rectal Saline Irrigation in Typhoid.

The good results obtained by continual irrigation of the rectum with normal saline solution in surgical cases induced Dr. D. Riesman of Philadelphia to try this method of treatment in cases of typhoid fever, in the hope that in this way one might facilitate the elimination of toxins from the system. For this purpose the author uses the ordinary physiological solution of sodium chloride without addition of calcium chloride. He has the apparatus working all day, with short intervals, so that there is a continuous instillation of the fluid into the rectum, but does not allow it to continue through the night. In this way 2½ to 4½ litres of fluid may be introduced into the system during the day. Dr. Riesman has employed the method in twelve cases of typhoid fever in the Jewish Hospital in Philadelphia, several of which were of a serious nature. All the patients recovered. The good effects of the treatment were seen in the increased diuresis and in the marked improvement in the general nervous symptoms. The idea naturally occurs, however, that the introduction of so much fluid into the system might easily increase the tendency to hypostatic congestion of the lungs, especially in prolonged cases, in which the heart's action becomes enfeebled, or in cases in which the kidneys may not be functioning efficiently, and in which the fluid would tend to accumulate in the tissue. These contingencies should therefore be borne in mind, and considerable attention exercised in the control of the treatment.—*The Hospital*.

Phantom Tumours.

Skilful palpation of the abdomen requires not only an exact knowledge of the topographical anatomy of the abdominal viscera, of their respective variations in position at different stages of respiration, and of

their possible displacements resulting from congenital anomalies or from stretchings of the peritoneal ligaments, but it also requires much personal experience of the varying degrees of rigidity or flaccidity of the muscles of the abdominal wall, of the normal variations in form and consistence that the same organ may exhibit to the palpating hand in different cases, and finally a considerable experience as to which organs can be palpated normally and which can not. Experience alone can enable one to escape the error of sometimes diagnosing as a neoplasm conditions which may be produced in normal or almost normal organs partly by alterations in their proper position and partly by transient, or, at any rate, unimportant changes in their shape or consistence. The weighty question of the sources of error in abdominal palpation is apt to receive too little attention in text-books.

Abdominal tumours may be simulated by the following conditions:—

(1) By abnormal rigidity or tension of the abdominal wall, particularly if only parts of the musculature are involved at a time; (2) by the great omentum; (3) by alterations in the positions of viscera; (4) by undue distension or by abnormality in the contents of the hollow organs; (5) by alterations in the form and condition of the stomach or intestines due to spastic contractions.

It is scarcely necessary to enter into great detail upon the question of mistaking swellings of the abdominal musculature for intra-abdominal tumours; one would like, however, to lay stress upon the *lineæ inscriptiones tendineæ* of the *rectus abdominis* muscles, which divide the latter up, as it were, into separate compartments, the portion contained in any one of which may be contracted, when the rest is flaccid, whereby even the most experienced observer may be misled into diagnosing a deep-seated neoplasm or inflammatory mass when there is none. The mistake is particularly liable to occur in nervous patients, especially in women, in whom pregnancy may thus be simulated to a degree of exactness that is surprising. In all such cases much assistance may be gained from getting the patient to cough, whilst the palpating hand notes what happens to the apparent tumour both during and after the effort. Sometimes in the case of a muscular lump it becomes more marked on coughing, whereas an intra-abdominal mass would cease to be palpable when the superficial muscles were strongly contracted. In some cases the only way to be sure is to give a general anæsthetic and then palpate the abdomen when the muscles are thus artificially relaxed.

The kind of condition in which the omentum gives the impression of a tumour to the palpating hand is when parts of it, or the whole of

it, have become puckered together, or rolled up in such a way as to simulate either the lower margin of an enlarged liver or else an intra-abdominal malignant tumour. This may result from fibrotic contractions after or during tuberculous peritonitis, or as the result of a former laparotomy. As an instance of the latter may be mentioned the case of a woman of 45 who had had the operation of ventro-fixation of the uterus 12 years before. She had now been suffering for some time past from constant pains in the lower and right side of her abdomen. On deep palpation in this region a distinct tumour could be felt, which was hard, slightly tender to pressure, and but little movable. It seemed to be about the size of the fist. There being some anæmia and loss of weight at the same time, the lump was thought to be malignant, though what the primary site could be was in doubt. An operation having been decided upon and performed, a large portion of the great omentum was found to be rolled up in a most remarkable way into a kind of ball which in turn was firmly united to the parietal peritoneum.

In regard to the third source of errors—congenital and acquired changes in the shape and position of normal organs—the most important examples practically are movable kidney, floating kidney, displaced liver, tight-lacing liver, Riedel's lobe, and wandering spleen. It is not very uncommon to meet with a portion of a "tight-lacing" liver as a freely movable tumour in the abdominal cavity, connected with the main liver merely by a thin bridge of atrophied liver substance or even only fibrous tissue (Riedel's lobe); sometimes this thin connecting band is overlain by bowel, so that one's hand cannot make out any connection between the two parts at all. A wandering spleen may be found in the most variable positions—one day in the right iliac fossa, another in the left, or even deep in the pelvis adjacent to the uterus; and it is clear how difficult the diagnosis may be in some such cases. It is not always possible to decide that the wandering organ is not in its right place, though the effort should always be made to determine this. Helpful points are: the fact that a movable or floating kidney never passes across the middle line, and that it is always better felt bimanually; and that a displaced spleen almost always comes in front of the colon and small intestines, and that it can nearly always be pushed back into its normal site.

As examples of over-distended organs that may give rise to difficulties, the stomach and the bladder may be mentioned. The latter is practically always median; it should disappear on micturition or on the passage of a catheter, but this is not absolutely always so, and it has sometimes given rise to an erroneous diagnosis of pregnancy, whilst, ou

the other hand, what is really an appendicular abscess in the middle line has been thought to be a distended but otherwise normal bladder. The stomach may be over-distended with either gas or fluid in such a way as to simulate a serious abdominal tumour, of which all signs may have disappeared by next day. The tumours that may be simulated by inspissated *fæces* in the large intestine are well known to all. The difficulty is a common one. In cases of chronic constipation the nature of a rosary-like series of small, hard lumps beneath the abdominal wall may be obvious; on the other hand, the *fæcal* mass may be extremely like a carcinoma of the sigmoid flexure, the *cæcum*, or of one of the flexures. Enteroliths and the like are only special forms of *fæcal* masses. It is only necessary to add that it by no means follows that a mass is not *fæcal* when it does not disappear after there has been an abundant evacuation of the bowel.

We may now pass on to the last of the main headings given above—namely, conditions spastic or spasmodic contraction of portions of the alimentary canal simulating tumours.

If one palpates the epigastrium and the region of the pylorus in one and the same individual at different times, it will become clear that, notwithstanding the general teaching that the pylorus is entirely covered by the liver, it can be recognised by palpation far oftener than one might expect—provided, of course, that the muscular development or stoutness of the patient allow of adequate palpation at all. The fact of the pylorus being palpable in this way depends partly upon the thinness of the edge of liver which can readily be pushed up out of the way when deep palpation is being made, but still more upon the motility of the stomach, which produces considerable physiological variations in its topography. When the stomach is empty the pylorus is known to approach the middle line, or even sometimes to lie slightly to the left of the middle line, and as the stomach becomes filled it moves over towards the right. Under certain circumstances, however the power of the pylorus to “wander” is very much greater than this—in conditions of gastropnoia, for example, or when the organ becomes deformed by gastrectasis. The most extreme degrees of wandering of the pylorus are seen in cases of carcinoma of that end of the stomach; for it may leave the epigastrium entirely, and be found in the hypogastrium or one of iliac fossæ. The most remarkable example of this fact is recorded by Chiari (*Prager Medizinische Wochenschrift*, 1888), who once met with it in a right-sided inguinal hernia. It is scarcely necessary to insist further upon the importance of this variability in pyloric topography. The forms under which the pylorus presents itself vary

with the degree of contraction in the pyloric ring itself, and in the pyloric segment of the stomach. Sometimes it feels like a band, sometimes like a tumour the size of a walnut or a hen's egg, and quite hard; it may extend more or less towards the left according as more or less of the pyloric portion of the stomach assists in the tonic spasm of the pylorus itself. Amongst the various conditions that have been accused of producing phantom tumours from such pyloric spasm may be mentioned mechanical or chemical stimulation by the gastric contents, abnormal quantity or quality of the food, hyperacidity, gastro-succorrhœa, excessive gas formation, ulcers or erosions at or near the pylorus, inflammations around it, and finally influences of a purely functional nervous character. An instance in point is the following: A nervous woman of thirty-seven had for several years suffered from pains in the stomach region, together with vomiting and constipation. The stomach now reached barely to the umbilicus, there was a well-marked succussion splash, and in the epigastrium in the regio pylorica there was to be felt, though not at every examination, a hard tumour about the size of a small apple, movable, tender to pressure, and situated to the right of a readily palpable aorta. The diagnosis was an ulcer at the pylorus with extensive infiltration around it. An operation was performed, and no tumour was to be either seen or felt. After about three minutes, however, the pars pylorica ventriculi passed into so firmly contracted a condition that it constituted a hard tumour-like mass three inches long and nearly two inches thick. There was at the same time a sort of twisting or erection of the contracted portion of the stomach, bringing it closer to the anterior abdominal wall. After about three-quarters of a minute relaxation came on slowly, and the tumour disappeared. Notwithstanding deep chloroform narcosis this phenomenon was repeated three times within a few minutes. There was no macroscopic disease of the stomach at all.

Instances of this kind might be multiplied indefinitely. In children it has sometimes been possible to feel the stomach contracted up into a small epigastric tumour. In the so-called congenital pyloric stenosis a pyloric lump, attributable to spasm, has not infrequently been felt. It may simulate the mass of an intussusception. Whether the spasm is due to hyperacidity or other error of the gastric juice, or whether the errors in the gastric juice are secondary to pyloric spasm, is a question that has never been satisfactorily answered.

How careful one must be in giving an opinion about such spasm-tumours is well exemplified by those cases of simple pyloric ulcer in which, notwithstanding the most careful treatment, hæmorrhage may

occur repeatedly, and emaciation may be so great as to suggest that the ulceration is really cancerous. KAMPMANN (*Strassburger Medizinische Zeitung*, 1907) records the case of a man aged 44, whom he saw in Ewald's wards. This patient had suffered from gastric symptoms on and off for ten years. The diagnosis made was gastro-succorrhœa, with an ulcer at the pylorus. Beneath the edge of the right lobe of the liver in the right para-sternal line, one was able to make out almost constantly a tumour that was tender to pressure, and about the size of a small hen's egg. This, coupled with the facts that the vomit repeatedly contained blood, and that the patient looked decidedly ill and wasted, gave a grave appearance to the case. An operation was performed with the object of possibly being able to remove an early carcinoma. The tumour turned out to be nothing more than the spasmodically contracted pars pylorica of the stomach, with a chronic ulcer on its posterior wall.

The duration of such a spasmodic contraction is very variable. Whereas the mass may last only a few seconds or minutes, and thus be felt obviously relaxing under the palpating fingers, it may, in other cases, persist for hours or even days at a time. RUTIMEYER and others have recorded cases in which chronic spasm of the pylorus has remained palpable and apparently unchanged for months. The mere fact that a tumour persists, or appears to persist, from day to day is therefore no absolute proof that the tumour is not a phantom one.

Turning now to a similar state of affairs in the intestines, it is particularly the cæcum, the ascending colon, the transverse colon, and the sigmoid flexure that admit of being palpated through the abdominal parietes; and according to their contents and the degree of spasmodic contraction of their walls they may either not be palpable at all, or else distinctly felt either as soft strands or columns, or as more or less hard tumours. The small intestine is much less often palpable, though entero-spasms may sometimes cause phantom tumours similar to those produced by the colon.

Remarkable tumour-like masses due to spasm can be felt in some cases of chronic colitis, where in addition to mere spasm there is a considerable excess of musculature owing to hypertrophy from former spasms. On either side of the rectus abdominis muscle in the upper part of the abdomen, it is not infrequently possible to feel the corresponding portions of the transverse colon, and it is easy to be led into the belief that there is a well-defined tumour. The apparent clearness of definition of the mass is due to the fact that the ribs cover both the hepatic and the splenic ends of the transverse colon, and the rectus abdominis

muscle covers its centre, so that instead of being able to palpate the transverse colon continuously, one is often able only to feel separate portions of it between the ribs and either the left or the right outer border of the upper portion of the rectus abdominis muscle.

Circumscribed spasmodic "knots" in the large intestine, due to persistent local contraction of portions of the bowel, are becoming recognised as a very real cause of difficulty in the diagnosis of acute abdominal conditions, apparently requiring immediate laparotomy, and sometimes the long-maintained spasm of the bowel may produce a definite mass, unilateral and hard, and quite as well-defined as a neoplasm. The lesion is probably an intestinal neurosis. It has led to the performance of many a laparotomy at which no microscopic disease could be found. WEST records several cases of the kind. KAMPMANN tells of a tailor who was thirty-five years of age, and highly neurasthenic, and who had been suffering for a year from abdominal pains of the most variable description and from diarrhœa. He thought he had a tumour, but he was kept under observation for some time without any being noticed, until one day there appeared a firm tender lump the size of a hen's egg, apparently in the upper part of the ascending colon, close to the hepatic flexure. It was true that the patient was suffering both from sleeplessness and from the most extreme degree of neurotic phenomena, but the lump seemed real enough. A faecal mass was excluded by the form and consistence of the lump, and also by the fact that the bowels were being regularly and freely opened. The mass could be made to disappear gradually by persistent circular massage, though it returned again thereafter.—*The Hospital*.

SURGERY.

Iodine Disinfection of the Field of Operation.

The report by H. E. STROUD, in 1905, of his employment of bromine solution as a wound disinfectant and his recommendation of bromine "as an antiseptic of the highest order," prompted in these columns (January, 1906), a brief comment on "The Halogens as Antiseptics." In this we referred to the value of iodine as a powerful surface disinfectant; and we added that notwithstanding their usefulness in the treatment of infected wounds, "the chief field of the stronger antiseptics is in the sterilization of inanimate objects and in the disinfection of the unbroken skin."

STROUD's article (*Surgery, Gynecology and Obstetrics*, December' 1905) seems to have awakened no enthusiasm for bromine solution as a wound

disinfectant, probably because it is more disagreeable to handle and no more serviceable than iodine. Chlorine, too, as liberated from chlorinated lime, is less used now than formerly, either for the surgeon's hands or as a disinfectant in houses and public places, in which latter capacity it has been largely replaced by formaldehyde compounds. Meanwhile, however, the surgical employment of iodine as an antiseptic has consistently and insistently developed.

Discovered by COURTOIS in 1812, iodine has had a remarkable history in internal medicine. In surgery it has occupied a less exclusive and eminent position, but it has played an important role nevertheless. We shall pass over the employment of iodine as a counter-irritant and "absorbent" and as a means of sealing up hydropic serous cavities (notably spina bifida and hydrocele sacs), and as an injection in the treatment of tuberculous and suppurating joints.

The antiseptic properties of iodine were first shown by LIEBIG, and established later, in bacteriologic terms by STERNBERG, KOCH, DAVAINÉ SENN and others. Its first striking triumph as a surface, or, more properly, endermic antiseptic was in the treatment of erysipelas. But it was also early used as a stimulant and disinfectant of ulcers, and in the local therapy of furuncles and carbuncles.

The introduction by CLAUDIUS, in 1902, of iodized catgut, especially aroused interest in iodine as a penetrating disinfectant. Its employment in aqueous solution in the irrigation and dressing of septic wounds soon followed. The elder SENN, who was one of the first to adopt CLAUDIUS' method and to pursue in other fields a study of iodine to which this method had stimulated him, concluded that "iodine is the safest and most potent of all known antiseptics" and that in appropriate solution it does not damage the tissues.

Long before this "ROUX, of Lausanne, first used the tincture of iodine as an aid in completing hand disinfection" (SENN). After disinfecting the hands in the usual way, he dipped his finger tips into the tincture, in order to sterilize the subungual space and nail folds. MIKULICZ and SENN adopted ROUX' method.

With the non-destructive, penetrating, antiseptic properties of iodine established, and after it had been used, with good results, for the sterilization of the surgeon's finger tips and, sporadically, for disinfecting abraded and ulcerated surfaces in the field of operation, it seems but logical that iodine should be tried as a routine means of sterilizing the unbroken skin of the field of operation. It was so tried by GRASSICH, a Roumanian surgeon, and its value was proclaimed by him a little over a year ago.

GRASSICH'S method has been tested by numerous surgeons and it has been generally commended. It possesses two paramount advantages: its extraordinary efficiency in preventing skin infections, and the simplicity of its application. Indeed, no method of skin disinfection can be simpler; it is merely necessary to shave the skin dry and to paint the entire area with tincture of iodine.

It has been shown that the iodine penetrates into the deeper layers of the skin. This penetration is said to be inhibited if the skin has been wet with water or watery solutions. Therefore, any preliminary washing should be by alcohol, ether or benzine.

It has been recommended that the tincture be painted on the skin several hours before operation, again on the table and finally about the line of incision, at the conclusion of the operation. This would seem to be too severe. Three such applications will, no doubt, sometimes cause blistering and desquamation. Occasionally a subject is found whose skin is sensitive to iodine and, therefore, when time permits, it is wise to test for skin susceptibility by painting a small area of the skin beforehand.

Any procedure that eliminates some of the tedious and often disagreeable features of our older methods of pre-operative skin disinfection deserves to be cordially welcomed. Further, when it is considered that GRASSICH'S method is apparently more efficient than the "scrubbing up" it seeks to supplant, and that it is eminently serviceable in emergencies, the importance of his contribution becomes evident.—*The American Journal of Surgery*.

Foreign Body Three Years in a Bronchus.

DR. SIROTININE, of St. Petersburg, records the following interesting case. A man, aged 50, was admitted to hospital suffering from acute pleuro-pneumonia of the right side. Soon after admission he was suddenly seized with a severe pain under the third right rib, followed by an attack of spasmodic coughing during which he expectorated a fishbone of a sturgeon. Soon afterwards another coughing attack resulted in the expulsion of a sort of membrane, which probably formed a capsule enclosing the foreign body in the bronchus. It was then elicited from the patient that the fishbone had been swallowed three years before, and that at the time he had a severe attack of coughing which lasted about three hours and was accompanied by acute pain under the third rib to the right of the sternum. The cough continued and the patient consulted a number of doctors, but they refused to believe that the bone

had remained in the chest. For over a year he was treated for bronchitis and emphysema. Then he had hæmoptysis. The pain in the chest diminished gradually and eventually only occurred on a severe attack of coughing, but he was unable to lie on the right side without exciting an attack of coughing. Bronchoscopy showed at a distance of 32 centimetres from the angle of the mouth the lumen of the bronchus filled to the extent of one-third by granulation tissue. This point would correspond to the level at which the right bronchus divides into three branches. The pulmonary and pleuritic inflammation rapidly subsided and the patient made a complete recovery.—*The Hospital*.

Varicose Veins.

APART from the ordinary surgical treatment, a number of methods of treatment of varicose veins have been devised consisting of injections of various substances, such as alcohol, ergotine, perchloride of iron, etc., with the object of producing either a coagulation of the blood in the vessels or an inflammation of the vessel walls. None of these injections however, are free from danger, and have consequently fallen into disuse. Dr. SCHARFF, of Stettin, now reports successful results from the injection into the veins of a weak solution of perchloride of mercury. He finds by experiment that varicose veins are affected by such injections differently from healthy veins—that, for instance, 1 c.c. of a 1 per cent. solution produces hardly any local reaction in a healthy vein, but in an affected vein excites inflammation with thrombosis and even gangrene of the adjoining tissues. For purposes of injection into the various veins he uses strengths of 1 in 3,000 and 1 in 5,000 of perchloride of mercury in normal saline, and commences with injections of 0.5 c.c. of the weaker solution, and gradually increases the dose to 5 c.c., and, if necessary, passes on to the stronger solution. Superficial veins of small calibre require smaller doses of the perchloride. It is necessary, however, that the solution comes into contact with the whole of the endothelium of the varices. For this purpose he advises that the elastic bandage applied to the limb to make the veins obvious should not be removed till after the injection is completed. Several injections may be carried out at different points at one sitting. The necessary interval between the sittings depends upon the reaction. The injection should be almost painless. If an intense burning sensation is produced, it is due to the needle penetrating the wall of the vessel and entering the surrounding tissue. The author claims to have carried out the treatment in 90 cases, and to have obtained satisfactory and lasting results.—*Ibid.*

The Removal of Plaster Appliances.

A SIMPLE and very practical method of rapidly removing splints, bandages, and other apparatus made of plaster of Paris is described by MAX STRANSKY in the *Medizinische Klinik*. A common pocket-knife and a little vinegar are all the appliances necessary. A cotton-wool swab is soaked in the latter, which is then applied to the plaster surface along the line where it is proposed to divide the apparatus. After waiting a couple of minutes the surgeon is able, without the slightest difficulty and without causing the patient any pain, to divide the apparatus along the line softened by the vinegar. The author has employed his method for the past twenty years with the greatest success. He has been able by it to remove in a minute and a half a plaster thigh-bandage consisting of 80 turns.—*The Hospital*.

Fatality under Spinal Anæsthesia.

By this time a large number of accidents have been put on record as the result of lumbar anæsthesia, and probably there have been at least, as many, if not more, unpublished. In the *Indian Medical Gazette* MAJOR GABBETT describes an interesting case in which death followed the insertion through the eleventh dorsal interspace of one milligramme of strychnine hydrochloride with one decigramme of novocain. It is difficult to decide from the account whether the fatal issue arose from strychnine poisoning or from overdose of novocain; it seems at least certain that respiratory failure was the direct cause of it. The patient was a native, aged forty one, who was to have a large elephantiasis of the scrotum removed, weighing 31 lb. Five minutes after the spinal injection he had anæsthesia up to the nipples, and ten minutes later still it had reached three inches above that level. He sat up for one minute after receiving the dose, and then lay down with his head on a pillow. Half an hour after the injection, just before the completion of the operation, he had dyspnoea and tried to vomit, and shortly after ceased breathing. All efforts at resuscitation failed, and it is mentioned that stiffness of the arms somewhat impeded artificial respiration. There had been practically no loss of blood and no shock, and the author attributes the result to spasm from the action of the strychnine rather than to the action of the novocain. He concludes by resolving to leave pioneer work alone in future, and to stick to general anæsthesia until spinal methods are improved by others.—*Ibid.*

Thrombosis of the Veins of the Penis in Gonorrhœa.

F. JACOULET.—Though gonorrhœal phlebitis of the limbs is well-known, little has been written on gonorrhœal phlebitis of the veins of the

penis. The writer has observed the following case of thrombo-phlebitis of the dorsal vein of the penis in acute gonorrhœa.

In a man, aged 22, gonorrhœa began on May 15, 1908. There was an abundant discharge, which was accompanied by general symptoms—fever, rigors and malaise—obliging him to remain in bed. On the 26th he had acute pain at the root of the penis, and at the end of micturition, which was very painful, some drops of blood escaped. On the 28th œdema of the penis appeared; it began at the prepuce, and spread up the organ to the root, so that the glans could not be uncovered. The œdema was soft and slightly painful, the skin was of normal colour; and there were no inflamed lymphatic vessels or inguinal glands. On the 29th, in the middle line of the dorsum of the penis appeared an indurated cord, which was easily palpated through the œdematous skin, moveable on the deeper parts, and slightly painful. On the lower surface of the penis, where the œdema was less marked, were distended and projecting veins, which, however, did not give the sensation of an indurated cord. Rest in bed, moist warm dressings, and baths for the penis were ordered. On the 30th the urethritis was still intense, and some drops of blood were passed at the end of micturition. Next day there was marked improvement, the discharge was less, and the pain was tolerable. The œdema had diminished, and was limited to the prepuce which could not be retracted. At the preputial orifice was a small superficial lenticular ulcer. The indurated cord on the dorsum persisted. The improvement continued until June 7, when an exacerbation of the urethritis occurred, the discharge increased, the pains reappeared, and the œdema augmented until it again involved the whole penis. At no time was there any inguinal adenitis. On the 10th, improvement again took place, the œdema was disappearing, but the indurated cord and the preputial ulcer persisted. Recovery ensued.

This was evidently not a case of œdema of the penis from lymphangitis. The absence of all redness of the skin, of inflamed lymphatic cords, and inguinal adenitis were opposed to this diagnosis. On the other hand, the fact that the œdema was only slightly painful, and the presence of an indurated cord in the position of the dorsal vein of the penis were clearly in favour of the diagnosis of phlebitis.

In 1836, Desruelles, in his work on venereal diseases, called attention to thrombosis of the veins of the penis during gonorrhœa. He described phlebitis of the dorsal vein of the penis and phlebitis of the deep veins which may produce gangrene. A few cases of the latter complication were subsequently published. Payenneville has recently insisted that

thrombosis of the dorsal vein of the penis is common, but is confounded with lymphangitis.

Superficial Thrombosis.—The different superficial veins may be involved. In thrombosis of the dorsal vein pain may be the first symptom, as in the case reported above. More often œdema and an indurated cord on the dorsum of the penis are first noticed. The œdema begins at the distal end and rapidly involves the whole organ. Sometimes it is white, soft and indolent, as in the case reported above; sometimes it is rosy and painful, showing the characters of inflammatory œdema. There is thus a complete analogy to phlegmasia alba dolens of the lower limb in which both varieties of œdema are observed. The indurated cord in the middle line of the dorsum of the penis is easily felt through the œdematous skin, and is moveable beneath the skin as well as on the deep structures. The last symptom is the development of a collateral circulation; the veins of the penis appear injected as in an anatomical preparation. In one case described by Payenneville the dorsal vein was not affected but only a venule of the frænum. Instead of an indurated cord a little nodule resting on a patch of induration was felt. Superficial thrombosis is much more benign than deep thrombosis; the phlebitis is not suppurative but only obliterative (A “phlegmasia alba dolens.”) Superficial gangrene has never been observed. The œdema lasts a month or 6 weeks, and the same is true for the collateral circulation. But the indurated cord persists, and the thrombosed dorsal vein is transformed into a nodule or a fibrous cord. Possibly some of the cases described as induration of the corpora cavernosa are the result of dorsal thrombosis. Writers describe “cylindrical bands in the axis of the penis independent of the corpora cavernosa,” which is suggestive. The treatment of superficial thrombosis consists of baths for the penis and warm moist dressings, combined with the usual treatment of the gonorrhœa. Surgical treatment is never indicated.

Deep Thrombosis.—The thrombosis of the cavernous veins is accompanied by thrombosis of other veins. In one fatal case the cavernous sinuses were found obliterated by clots which extended into the vesical and prostatic plexuses. In another case there was an abscess of the prostate with phlebitis of the peri-prostatic plexus, and the thrombosis has extended to the penile and pudic veins. The enlarged corpora cavernosa contained black, pitch-like blood mixed with reddish clots showing purulent striæ. In addition to these local lesions phlebitis of distant veins, such as the saphenous or posterior tibial has been observed. Deep thrombosis of the penis occurs in patients suffering from general gonococcal infection or from a pelvic abscess of gonorrhœal origin. The

first symptoms are acute pains in the penis radiating into the perinæum. Soon the penis becomes enormously swollen. This is partly due to œdema of the lax superficial tissues, and partly to tumefaction of the corpora cavernosa. Inflammation of the corpora cavernosa may progress without involvement of the corpus spongiosum, the soft and flaccid gland then contrasts with the rigid corpora cavernosa. Painful persistent priapism is the result. Obliteration of the deep veins of the penis rapidly causes gangrene which may involve the whole organ, and even the perinæum. Livid patches appear on the penis and become gangrenous. A line of demarcation forms, and the parts separate with great loss of substance. The gangrene is accompanied by severe constitutional symptoms, pyrexia, earthy complexion, and dry tongue. The prognosis as regards life is serious; 3 out of 5 cases were fatal from septicæmia, and at the necropsies purulent phlebitis was found. From the point of view of function the prognosis is also serious. Elimination of the gangrenous parts involves a vicious cicatrization with profound alterations in the different tissues of the penis. The treatment of deep thrombosis is early incision of the corpora cavernosa through both the penile and perineal segments. When gangrene occurs separation of the sloughs and cicatrization should be facilitated. Later, a plastic operation may be necessary.—*The Medical Review*.

Late Secondary Syphilis.

JEANSELME.—The secondary period of syphilis is conveniently regarded as extending from six weeks after the chancre till the end of the second year, but irregularities are frequent so that it can never be definitely affirmed either that the secondary period is at an end or that the syphilis is no longer virulent. It is not uncommon for severe nervous symptoms such as hemiplegia to occur within six months of infection. In a case seen by the writer there were nodes on the forehead coinciding with mucus patches on the throat and genitals, the patient having been infected less than 5 months previously. On the other hand the secondary symptoms may continue for an indefinite period. In a woman aged 44, large patches of erythema appeared on the face, the body was covered with a macular eruption, and there was a mucous patch at the angle of the mouth, all suggesting a recent infection, although the initial lesion occurred 18 years before. The secondary period was severe, the roseolar eruption being prolonged and, like the mucous patches, tending to recur at intervals, while the loss of hair was exceptionally profuse. With these symptoms existed others of tertiary type, such as perforation of the palate 9 years before. A man,

aged 44, presented an extensive circinate eruption on the chest and arms, coinciding, in spite of its recent appearance, with leucoplakia of the mouth; the initial chancre occurred 24 years before. Mercurial treatment caused the disappearance of the eruption in 3 weeks. Mucous lesions of the mouth may persist much longer than usual, especially in smokers, though similar lesions may be seen on the labia or inner surface of the prepuce. In these cases there is a possibility of conjugal infection which may occasionally occur 7 or even 10 years after the chancre. In 19,000 cases of syphilis observed by FOURNIER, 1,096 presented secondary symptoms after the end of the third year. Among these were 434 lesions of the mouth, including 371 of the tongue. In all cases presenting this tendency to prolongation of the secondary period special care is necessary in permitting the patient to marry, especially if relapsing mucous lesions exist. Such patients should be submitted to a fresh course of anti-syphilitic treatment which may require to be repeated from time to time.—*The Medical Review*

The Open Method of Treating Wounds after Skin Grafting.

GEORGE WILLIAM DAVIS, M.D., B.S.—In a case of grafting over a granulating surface of the foot 7 small grafts from the opposite thigh were placed directly on the surface of the granulation tissue, and instead of the usual dressing of tinfoil, etc., no dressing of any kind was applied, but the foot and leg were protected by a wire gauze meat cover cleaned with methylated spirit and having an opening made to include the leg. The wound was prevented from becoming dry by dropping saline solution upon its surface. The 7 grafts took well and appeared to be more vigorous than usual.

It would be easy to make wire covers in various shapes suitable for any part of the body and bearing at their upper part a small flat tank having a capacity of four fluid ounces and covered with asbestos to maintain the warmth of the fluid. A tube of flexible metal would enable the saline fluid contained in the tank to be directed on to the wound and a tap would control the rate of flow. A layer of cellulose dressed back by a piece of mackintosh would be amply sufficient to absorb the overflow. The temperature of the part in winter could easily be maintained by a little arrangement to that end.—*Ibid*.

Sudden Swelling of one Parotid.

E. Strelitz.—A man, aged 67, sitting at his desk reading, suddenly turned his head round. He felt a jerk and a sense of tension in

the left side of his face which he found was much swollen. A doughy, sausage-like tumour could be felt in front of the ear extending with uniform diameter from the level of the tragus to one cm. beyond the angle of the jaw. The swelling was painless even on pressure, but it caused a sense of tension when the mouth was opened. The patient felt well and the temperature was normal. No increased flow of saliva was noticeable, nor did pressure on the tumour affect the secretion. The sudden occurrence of the tumour is indisputable, as the patient had shaved half-an-hour earlier, and must obviously have noticed the swelling had it then been present. Twenty-four hours after its appearance, the swelling had decreased considerably, but was still visible and palpable. On the fourth day the appearance of the face was again normal, but the swelling could still be plainly felt under the angle of the jaw. Uneventful recovery followed. Both its origin and subsequent course clearly show that this was a tumour of the parotid caused by kinking or wounding of Stensen's duct. Such cases have occurred according to KONIG and have healed by first intention without the diagnosis having been made.—*The Medical Review*.

General Anæsthesia by Means of X-Rays.

In the *New Zealand Medical Journal*, under the above heading, Dr. J. P. HASTINGS, Honorary Anæsthetist to the Ounedin Hospital, describes some original experiments made by him on the guinea-pig. After reading the work of LEDUC, of Nantes, on the production of general anæsthesia in animals by means of the interrupted electrical current, he was struck with the idea that similar effects might be produced by the x-rays. The tube used was a hard Crookes, the strength of current in the coil 5-6 amperes, the length of spark 12 inches, and the strength of current in the tube itself 2-3 milliamperes. The following are the author's suggestions with regard to the best position in which to place the animal: "Draw an imaginary line at right angles to the surface of the anti-kathode; on this line take a point one inch from the surface of the Crookes tube; place the animal to be anæsthetised so that the imaginary line cuts the back of the skull at the point indicated." Anæsthesia is complete in two to three minutes after the commencement of the exposure, the time varying slightly in different animals. The length of time varies inversely as the strength of the current and the distance of the animal from the tube. Previous to the onset of anæsthesia there is a stage of excitement during which the animal struggles convulsively. The struggles gradually decrease until unconsciousness and complete relaxation are present. The breathing and heart-beats lessen in intensity. Anæsthesia lasts five to

seven minutes, during which there is complete insensibility to external stimuli. As the effects pass off the heart commences to beat more strongly and the respirations become deeper. Consciousness gradually returns, the animal stands up, and moves about in a dazed fashion. Finally it runs about as well as ever. There are no after effects such as nausea, and no apparent impairment of intelligence. The results have been approximately the same in all cases, and no death has occurred. The author thinks that radium emanations may have a similar effect of inducing anæsthesia, in that the gamma-rays of radium are comparable to the x-rays, and resemble the latter in penetrative power. He is uncertain whether the subject of x-rays anæsthesia will ultimately prove of more than academic interest, and would welcome further experiments with a view to elucidating the point. He is at present investigating the possibilities of blue light as a producer of anæsthesia.—*The Hospital*.

OBSTETRICS AND GYNÆCOLOGY.

Retained Membranes: Shall we Remove them at the Time of Labor?

BY

GEORGE L. BRODHEAD, M.D.,

Professor of Obstetrics in the New York Post-Graduate Medical School and Hospital; Instructor in Obstetrics in the New York University and Bellevue Hospital Medical College, New York City.

All authorities agree that retained portions of placenta should be removed. Fortunately, however, it has been our experience that, following the expression or manual extraction of the placenta after labor, at or near term, portions of placenta are very rarely retained. In the last four thousand cases, almost entirely at or near term, in the service of the Post-Graduate Hospital, we find that fragments of placenta have been retained and curettage has been performed for their removal in only twelve cases, or once in 333 cases. In two of these patients retention was suspected at the time of labor and curettage was done. Of the latter ten cases, four became septic and six had sapremia.

The retention of membranes is, on the contrary, of frequent occurrence. HIRST, in the last edition of his "Text Book of Obstetrics" states that "MARTINI reports 71 cases in 2,960 births, while REIHLEN found a retention of some portion of chorion in 152 out of 3,534 labors (4.3 per cent.) CREDE reports 91 in two thousand labors, and believes that the retention of chorion is not at all dangerous. OLSHAUSEN declares that the retention of chorion never justifies interference to extract it. REIHLEN never saw

hæmorrhage as a result of retained chorion. SCHRÖDER asserts that retained amnion and chorion practically never cause bleeding even when retained 'in toto.' MICKEL and HEGAN, on the other hand, have shown that retained membrane could give rise to puerperal hæmorrhage as well as septicemia."

HIRST says it is not wise to invade the internal genitalia in order to remove small shreds of membrane, but if a greater part of the membranes has been retained it is advisable to remove it.

EDGAR in the second edition of his "Text Book of Obstetrics" stated that "the mere retention of membranes was no indication for the invasion of the uterus, in the absence of symptoms of infection." Again, in the third and last edition, he states that "when uncertainty exists regarding the retention of small pieces of membrane, one can safely adopt an expectant plan of treatment, as this is safer than intrauterine manipulations. The proposed routine and vaginal examination of the genital tract at this time to determine the condition of the part and the retention of secundines cannot be too rigorously condemned. Nothing is to be gained by this course save in very exceptional cases, and as its routine practice involves a distinct element of risk, its adoption cannot be recommended."

Many authors state that the placenta and membranes should be carefully examined, but they do not state whether retained membrane should be removed or not.

Fearing sepsis and hæmorrhage should retained membranes be left in the uterus, it was my custom in my early hospital obstetric experience, to invade the uterus with the hand or with a placental forceps in search of missing pieces of membrane, a procedure which was attended frequently with little or no success. But during May last year as resident physician at the Sloane Maternity Hospital, it was my routine to leave all retained membrane in the uterus, and as far as I could judge, patients recovered as promptly as when treated by efforts to extract the retained portions. It has been my rule, therefore, not to interfere in these cases.

A few figures will prove of interest. In the service of the Post-Graduate Hospital and in private practice, I have collected records of 84 cases of retained membranes, the large majority of the patients being at or near term. The amnion is rarely retained, but the chorion may be wholly or partly retained. In 70 of these 84 cases, the puerperium was absolutely normal, this number including nine patients in whom all or nearly all of the chorion was retained. Of the 13 patients who had a

temperature of over 100° F., the temperature was due in one case to dysentery, in two cases to constipation, in one to "caked" breasts, in one to retained lochia (the patient having had no lochia from the seventh to the ninth day, the temperature dropping to normal within twelve hours after a uterine douch was given). One patient, with four-fifths of the chorion retained, had an afebrile puerperium, but on the twenty-second day, while applying a tampon for subinvolution, I noticed a mass $1\frac{1}{2} \times \frac{3}{4}$ inches, protruding from the external os. There was slight bleeding, and upon further examination the mass was found to be attached by a small pedicle to the lower posterior uterine wall. After removal of the mass, recovery was uneventful. The microscope revealed numerous chorionic villi, constituting a placental mole, the only one of these which has come to my notice.

Eight patients had elevation of temperature due partly at least to sapremia. To indicate how mild this sapremia was, it is only necessary to state that one patient with retention of the entire chorion had a temperature on one day of only 100.2° F., another patient had 100.6° F., on one day another 100.8° F., another 101.4° F., another (with entire chorion retained) 101.6° F., another 102.8° F., and still another had 101.2° F., one day, and 103.6° F., on the next, with subsequent temperature normal. One patient had "slight temperature"—but the degree was not stated. One patient was curetted, three were given a uterine douche, and all recovered without sepsis.

In some cases the retained membrane came away *en masse*, in others in small pieces, while in still other cases no traces of the retained portions could be found, the membrane coming away apparently in the form of fine debris with the lochia.

From these figures it is evident that nature will, as a rule, take care of retained membrane, if the patient is not infected from without. Therefore, when membranes are retained, we advise against exploration of the uterus at the time of labor as being an unnecessary and dangerous procedure.—*American Journal of Surgery*.

Death Following a Vaginal Douche of Lysol.

A CHVOJKA.—In the Prague Clinic the writer was accustomed daily or on alternate days to give vaginal douches of 4 or 5 litres ($8\frac{1}{2}$ pints) of a 1 per cent. solution of lysol to every primipara over 30 as a prophylactic against rigidity of the os. The results were satisfactory until the following case occurred.

During the administration of a lysol douche the patient suddenly complained of cardiac oppression. The pulse became infrequent and the face cyanosed and shortly afterwards respiration was slow and superficial with tracheal rattling. After artificial respiration with massage of the heart the woman regained consciousness and exclaimed that she was dying. Consciousness was again soon lost and, in spite of all attempts at resuscitation, death occurred 3 hours after the injection was given. The child died simultaneously. *Post mortem* the only abnormality found was that the placenta near the internal os was slightly detached. There was no air embolus.

The injection was given by an experienced midwife in the writer's presence with the patient in the usual examination position. There was no discharge of blood. The only theory which would explain the facts is that the lysol was absorbed from the small area of placental detachment.

The writer has given no intra-uterine douches—even in cases of retained and decomposing placenta—during the last 14 or 15 years. The only exception he makes is to give an intra-uterine injection of 50 per cent. alcohol in retention of lochia with pyrexia. Before this period some cases of puerperal tetanus occurred and all obstetric operations were as much as possible avoided. The results are at least as good as when intra-uterine douches are given and the rigors so common after injections are avoided.—*The Medical Review*.

Vomiting of Pregnancy and Suprarenal Treatment.

Attention is called to the remarkable effect of a few cubic centimeters of a solution of the juice from the capsule of the suprarenals in promptly arresting previously uncontrollable vomiting. The patient was a young woman at the third month of her second pregnancy, dangerously debilitated from the almost incessant vomiting. All other treatment was suspended except the nutrient enemas, and ten drops of a 1 to 1,000 adrenalin solution were given morning and night, at first in an enema of 150 grammes water, with twenty drops of landanum, after three days, in ice-water, by the mouth. The vomiting ceased by the second day, and by the third, the patient was able to retain a little food. On the eleventh day the dose was reduced to ten drops a day, and this was kept up for nine more days. Toward the end of the pregnancy there was a recurrence of tendency to nausea, and ten drops of the adrenalin solution were given for five days, during which the tendency subsided, and a well-developed child was delivered at term, and is now growing normally.—*Monthly Cyclopædia and Medical Bulletin*.

Late Vomiting of Pregnancy.

Dr. S. S. Crockett reports three cases of *late* vomiting of pregnancy. In each of the cases vomiting had become so severe and frequent by the end of the eighth month that premature labor had to be induced. The author attributes the symptomatology in these cases of toxemia of pregnancy, the two organs most likely to be affected being the liver and the kidney.

In the liver the pathology found is analogous to but less marked than that found in eclampsia—namely, thrombosis, local necrosis and hæmorrhage.

The changes in the kidney are of such uniformity that effort is being made to characterize the degenerative changes found in the epithelium of the uriniferous tubules as a pathologic individuality under the name of the "Kidney of Pregnancy."

It is not difficult to realize that the slight functional disturbances from over-eating or improper diet, lack of properly regulated exercise, or inattention to the condition of the skin in a pregnant woman, with a liver and a kidney already struggling under the double work incident to pregnancy, and perhaps already crippled by the pathological processes above mentioned, might and will precipitate a clinical symptomatology that would vary in severity and even in character all the way from a very slight nausea, or an apparently insignificant headache, to a rapidly fatal eclampsia.—*Medical Review of Reviews*.

THERAPEUTICS.

Chloral Hydrate as a Local Application.

We have no doubt that chloral will soon become popular as a local application, for it has received the endorsement of such men as QUINCKE and HELLER, and the latter's paper has been widely abstracted.

PROF. HELLER of Kiel advocates its use in a 2.5 per cent. solution for all inflammatory conditions of the throat and mouth. It is strongly antiseptic and parasiticide and it also acts as a local anaesthetic and at the same time excites an intense hyperemia and transudation. He considers it greatly superior to potassium chlorate. A small quantity of the solution should be taken into the mouth and thrown about by masticatory movements and by movements of the head from one side to the other, but not gargled. This should be repeated every half hour. It is particularly efficacious in inflammatory conditions involving the tonsils. In stomatitis of mercurial origin a spray of a 2 per cent. solution may be allowed to play on the gums, and at the same time a mouth-wash of 1 per cent. solution should be used frequently. In chronic laryngitis a

spray of 1 per cent. solution is found useful. PROF. QUINCKE recommends a spray of a 1 per cent. solution of chloral in normal saline solution in nasal diphtheria. It has also been found useful in pulmonary gangrene to suppress the fetid odor of the expectoration.—*Medical Review of Reviews*.

Apocynum Canabinicum (or Cannabinum) in Cardiac Dropsy.

F. KRAEMER.—Canadian hemp, which belongs to the same family as strophanthus (apocynæ) has long been used in Asia and America and is said to act on the vagal branches of the cardiac nerves more rapidly than digitalis. The initial dose of the fluid extract is 3 to 5 minims thrice daily, which may be increased to 8 or 10 minims. If no result occurs within 5 days it is useless to persist. The writer reports the following:—

A publican, aged 57, had arterio-sclerosis, myocarditis, and extreme indurative hepatic enlargement. There were œdema and ascites, which had proved refractory to digalen, digitalis, digitalis with diuretin and agurin alternately, digitalis with caffeine, strophanthus, theocin, theocin sodio-acetate, theophyllin, extract. fluid. equiset. arvense, juniper, and 2 courses of calomel, in all cases with restriction of liquids. Fluid extract of apocynum was given in doses of 12 minims 3 times daily rising to 15 minims. Twenty hours after the first dose the swelling of the legs had subsided, the right being of almost normal size. The ascites was also less. The liver remained stationary. The œdema eventually returned, but the effect of apocynum was unmistakable.—*The Medical Review*.

Adrenal Therapy.

BY

CHARLES E. DE. M. SAJOUS, M.D., LL.D.
*Professor of Therapeutics and Pharmacology, in Temple
University, Philadelphia.*

The list of disorders in which adrenal preparations have been tried could be greatly extended, but I have limited myself to those in which their use has proven advantageous in the hands of a sufficiently large number of practitioners to warrant their being added to our trusted remedial agencies. Of these, a certain number may even be said, interpreted from my view-point, to exceed other means at our disposal in value. These are:—

1. Addison's disease. In this affection adrenal preparations compensate for the deficiency of adrenal secretion, and, therefore, for deficient general oxidation, metabolism and nutrition. The dosage should

be adjusted to the needs of each case. Beginning with three grains of the desiccated extract three times daily after meals, the dose should be gradually increased until the temperature and the blood-pressure become normal, when the last dose should be maintained.

2. Surgical heart-failure, collapse from hæmorrhage, shock, asphyxia and submersion. Here the adrenal active principle (suprarenalin, adrenalin, etc.), as a catalyser and a constituent of the hæmoglobin, promotes energetically the intake of oxygen and its utilization by the tissue-cells, including the muscular elements of the cardio-vascular system, and thus causes them to resume their vital activity. It should be very slowly administered intravenously, five minims of the 1-1000 solution to the pint of warm (105° F.) saline solution. In urgent cases, ten drops of suprarenalin or adrenalin in one drachm of saline solution can be used instead, and repeated at intervals until the heart responds. Artificial respiration hastens its effects.

3. The toxæmias, including bacterial infections, surgical septiciæmias, etc., when collapse threatens, especially when a persistently low blood-pressure, hypothermia and cyanosis are present. Besides enhancing pulmonary and tissue respiration, the adrenal principle, administered in the same way, enhances the efficiency of the immunizing process.

4. Capillary hæmorrhage from the pharyngeal, œsophageal, gastric or intestinal mucous membrane. The mastication of tablets of adrenal substance, or the oral use of powdered adrenal substance in five-grain capsules arrests the flow, by causing active metabolism in the muscular elements of the arterioles of the mucosa and constriction of these vessels.

I may add to these a series of disorders in which adrenal preparations will probably prove of great value when sufficient evidence will warrant a final conclusion. These are:—

1. Sthenic cardiac disorders with dilatation of the right ventricle, dyspnœa, and possibly cyanosis and œdema, owing to the direct action of the adrenal principle on the right ventricle and improved oxidation and metabolism in the cardio-vascular muscles and the tissues at large. Tablets of from one-half to two grains of the desiccated gland can be taken after meals.

2. Asthma, to arrest the paroxysms, by augmenting the pulmonary and tissue intake of oxygen and the cardio-vascular propulsion of arterial blood. From five to ten minims of the 1-1000 solution of suprarenalin or adrenalin in one drachm of saline solution should be injected drop by drop into a superficial vein, or hypodermically.

3. To prevent the recurrence of serous effusions in the pleura, the peritoneum, the tunica vaginalis, etc., after aspiration, by reducing the permeability of the local capillaries and restoring the circulatory equilibrium. From eight minims to two drachms (according to the size of the cavity) of suprarenalin or adrenalin, in four times the quantity of saline solution, should be injected into the cavity.

4. In neuralgia or neuritis, applied to the cutaneous surface over the diseased area to produce ischæmia of the hyperæmia nerves and thus arrest the pain. One to two minims of a 1 to 1000 adrenalin ointment should be applied by inunction.

The doses advocated will appear small to many. I can only urge in explanation that the power of the adrenal principle, as shown by physiological chemists and my own investigations, is such, that it should be used with the greatest circumspection. Several recently reported deaths from its use emphasize the need of precautions when employing the hypodermic intramuscular and intravenous methods. Their oral use is at best unreliable. This does not apply to that of the gland itself, nor to the desiccated gland, one grain of which represents six grains of gland substance. These prove quite effective, though slowly in most instances, when the disorder or condition present actually involves the need of the adrenal principle, to enhance either the oxidizing power of the blood or its immunizing properties.—*Monthly Cyclopædia and Medical Bulletin*.

Quinin and Cancer.

Epithelioma has been treated by the writer with local application of quinin stirred with water to a paste and applied with a cotton wad in a number of cases in which operation was refused. In every instance the quinin had a caustic action on the growth, eating it out until the ulceration was three times or more the size and depth as at first. He renewed the quinin every second day for four times. The lesion then began to heal over with a simple iodoform dressing, and by the twentieth day had entirely healed. This experience has been repeated too many times, he asserts, for it to be a mere coincidence; the quinin applications are continued until the lesion ceases to spread under its influence. They are also useful, he believes, in palliative treatment of inoperable uterine cancer. The quinin also serves to differentiate cancer from ordinary erosins; with the latter there is none of the destructive action observed with cancer. He advises application of quinin as a preliminary to radical operation as it aids in clearing up the diagnosis.—*Ibid.*

Death from Fifteen Grains of Quinine.

G. BAERMANN.—The symptoms of cinchonism are usually so mild that quinine in medicinal doses is regarded as one of the most harmless of alkaloids. Severe collapse, metrorrhagia, parenchymatous hæmorrhages, albuminuria, amaurosis with eventual optic atrophy and diminution in the visual field, may occur, though rarely. The rôle of quinine in blackwater fever is not definitely settled. The condition is said to occur after the administration of quinine to individuals without malarial parasites, though formerly malarious. However this may be, there is nothing surprising in the production of hæmolysis by quinine in a predisposed subject. Apart from blackwater fever the writer has found recorded no fatal case of poisoning by a medicinal dose of quinine. Hence the interest of the following case:—

A robust Chinaman was admitted to hospital in Sumatra on Nov. 12, 1907. The spleen was enlarged. The urine was normal. The temperature was 101.3° and the blood contained a few tertian parasites. At 3 P. M. he was given $\frac{1}{2}$ gm. ($7\frac{1}{2}$ gr.) of hydrochloride of quinine in solution. On the following morning the temperature was normal and no parasites were found. He was given another $\frac{1}{2}$ gm. of quinine, which was immediately vomited. As vomiting after quinine is not unusual it was disregarded and at 3 P. M. another $\frac{1}{2}$ gm. was given and retained. About 30 minutes later the man walked to the bathing-place, where he was attacked with most profuse sweating and became collapsed. He was immediately put to bed. From the nose ran a stream of bright red blood. The pupils were dilated and did not react. There were no spastic or other paralytic symptoms. The pulse was 56 and tense. The mucous membranes were pale. No parasites could be found in the blood.

The man rallied from the faint fairly rapidly but could give no satisfactory answers to questions and had retarded powers of perception. As the epistaxis persisted the nostrils were plugged with satisfactory results. About 3 hours later $\frac{1}{2}$ litre (17½ oz.) of recent blood was passed per anum and the pulse suddenly rose to 100, becoming small and soft. An intravenous injection of saline solution, with seven drops of adrenalin (1 in 1000) was given. During its administration a petechial eruption of spots, varying in size from a farthing to a child's hand, and in places raised above the skin, developed. Simultaneously hæmorrhages occurred under the conjunctiva and the mucosa of the cheeks. A quarter of a litre of bright blood was vomited and frothy blood was coughed up. After 15 minutes the pulse was 140 and fluttering. About $\frac{1}{2}$ litre of blood streamed from the anus and death occurred.

NECROPSY.—The petechial eruption involved the entire surface except the face and scalp, the patches in places being confluent. Similar hæmorrhagic effusions were present in the muscles and their sheaths, parietal peritoneum, mesentery, great omentum, serous coat of the intestines, and pleural and pericardial cavities. There were also submucous and intra-muscular hæmorrhages in the cheeks, lingual mucosa, œsophagus, stomach and intestine. Recent blood was found in the stomach and extremely contracted intestine. The lungs were normal, though the bronchi were riddled with hæmorrhages and blood occurred in their lumina. Hæmorrhages were also present in the heart, epicardium and pericardium, liver, pancreas, enlarged spleen, kidneys, including the pelves, ureters and bladder. The urine was hæmorrhagic. The intima of the aorta and larger vessels was studded with hæmorrhages, which in places had separated the intima from the media. Small hæmorrhages were present in the brain and meninges. The organs, except for hæmorrhages, were all normal. Cultures made from the blood proved sterile and the serum did not give Widal's reaction. The necropsy excluded any recognized disease, and death could not be attributed to tertian ague, which had only existed (according to the history) 4 days. Quinine had not previously been taken, nor could the quinine used have possessed unusual toxicity; many other patients took it with impunity. Thus idiosyncrasy alone could be in question.

A somewhat similar case was reported by KULZ. But in this the patient had had severe pernicious malaria, which may have been the cause of the multiple hæmorrhages, which occurred after a single dose of 1 gm. of quinine, especially as he had previously taken quinine without ill-effect. On a second occasion a dose of 0.05 gm. (about $\frac{1}{4}$ gr.) of quinine sufficed to renew the hæmorrhage, though to a slighter extent. Later an attack of blackwater fever occurred. SALOMON also saw a case in which extensive cutaneous and mucous hæmorrhages occurred after 2 doses of 0.3 gm. (about $4\frac{1}{2}$ gr.) and 0.15 gm. (about $2\frac{1}{4}$ gr.) given on consecutive days. The patient—a woman—had previously borne these doses well. As the condition was lupus erythematosus and not malaria, the hæmorrhages were evidently due directly to the toxic action of quinine. The patient recovered.—*The Medical Review*.

Pituitary Extract.

SINCE the publication of Dr. BLAIR BELL'S researches in the *British Medical Journal* a few months ago, the use of infundibular extract as a hypodermic injection has become widely popular. Whether it quite realises all that is hoped for, time has yet to show. Infundibular extract

is administered in doses of about two grains of the fresh gland; and various firms are preparing sterilised solutions in glass capsules containing this or some similar dose. It is claimed that in conditions of shock this substance causes a rise of blood pressure even greater than that which it causes in the normal individual, and this effect lasts many hours. Accordingly, its use is advised in such states as post-operative shock, anæsthetic overdose, collapse from hæmorrhage, and so on. It also increases intestinal peristalsis, so that after severe abdominal operations when severe shock is a feature it combines the two advantages of preventing ileus and of raising blood-pressure. It also appears that this action on the intestinal muscle fibres, like that on the arterial coats, is more definitely obtained when atony and paresis are considerable. For this latter purpose another remedy that has lately been highly lauded is eserine salicylate. Of this drug 1-40 grain, with 1-60 grain of strychnine and 1-50 grain of digitalin, given hypodermically every hour, is said to act in a most satisfactory manner.—*The Hospital*.

PÆDIATRICS.

Delayed Ligature of the Umbilical Cord in Apparent Death of the Child.

J. JERIE.—It is usually accepted that in ordinary cases the umbilical cord should not be tied until its pulsations have ceased, so that the child may receive the benefit of 60 or 70 gm. of blood from the umbilical vein. When the child is born apparently dead, on the other hand, it has been recommended that the cord should be at once ligatured and divided so that the manipulations necessary for resuscitation should be begun as soon as possible. The writer, believing that the child, being in a state of asphyxia, would benefit from the receipt of oxygenated blood, performed artificial respiration, leaving the cord intact. The pulsations of the cord, which were feeble at the beginning of artificial respiration, became rapidly stronger and in 3 cases the infants were rapidly resuscitated. When the child is born in a state of asphyxia and no contraindication in the condition of the mother, such as hæmorrhage, exists, the cord should be left intact and artificial respiration begun at once. The same procedure has been recommended by Volland in blue asphyxia.—*The Medical Review*.

TOXICOLOGY.

Poisoning by Oil of Eucalyptus.

W. R. KIRLSNESS, M. R. C. S. CASE 1.—A man, aged 28, suffering from a cold, dosed himself for 2 or 3 days with oil eucalyptus, inhaling

2 to 3 drops from a pocket handkerchief, and sucking numerous eucalyptus and menthol gum lozenges. He took little nourishment. He drank 2 or 3 teaspoonfuls of oil of eucalyptus, in mistake for ammoniated tincture of quinine, and went to his office. He noticed nothing until he had been walking about 10 minutes, when he was seized with giddiness and faintness and ataxic gait as though he had taken alcohol. He just managed to reach his house when the following symptoms occurred: His breathing became laboured and distressing: his pupils were dilated, and pulse very weak and thready; his temperature was subnormal (95° to 96°). Violent vomiting occurred before any emetic was given. His skin was a greenish-yellow, and he felt a girdle-like constriction around the abdomen. He was very drowsy, and complained also of shivering and great cold, with intense frontal and occipital headache. About half an hour after taking the oil there was violent diarrhoea, with painful and excessive micturition. The urine was dark and the motions smelt strongly of the oil. The skin also smelt of the oil. He was given a simple emetic and stimulants and put to bed; four hot-water bottles and many warm thick blankets were used, as the collapse was severe. After a few hours he felt better, the temperature rose, and the pulse became better. For 3 days the skin retained the chlorotic hue, which only gradually passed off. He was very depressed, his mental faculties were blurred, and he was unable to make any effort. Drowsiness continued for 3 days, and his gait was somewhat ataxic. For nearly a fortnight his breath, urine, faeces, and skin smelt strongly of the oil.

CASE 2.—A girl, aged 18, swallowed about a drachm of eucalyptus oil, with which she had been rubbing her gums to allay toothache, as well as sucking the lozenges. All the symptoms observed in the first case were produced, but in less degree—namely, intense headache, vomiting, collapse—bodily and mental—feeble pulse, subnormal temperature, girdle-like constriction around the abdomen, and dilated pupils.

It has been stated that larger doses than 3i to 3ij have been given with little or no untoward effects, and that mothers in certain districts have been accustomed to give 3j doses for colds to their children. Evidently oil of eucalyptus does not affect all people alike. Its dosage, according to Mitchell Bruce and Hale White, is $\frac{1}{2}$ to 3 minims. It seems to be closely allied chemically to oil of turpentine, containing several isomeric terpenes, of the formula of $C_{10}H_{16}$, and causes similar symptoms.—*The Medical Review*.

Inhalations of Ether an Antidote to Cocaine.

ANOTHER antidote of perhaps more practical value consists in inhalations of ether for cocaine-poisoning. Injections of ether are a common practice to combat cardiac failure in cocaine-poisoning, but Dr. ENGSTAD, of Grand Forks, U. S., recommends that the ether be inhaled. He appears to have had experience of several cases of accidental poisoning arising from cocaine anaesthesia. At first he had recourse to injections of strychnine and morphine, but he found their action was too slow to be depended upon where life was really in danger. Ether inhalations, on the other hand, rapidly stimulate the respiratory and vasomotor centres, and at the same time exercise a powerful tonic effect upon the cardiac muscle. In all these respects, therefore, ether acts as a direct antagonist to cocaine. Under the influence of the inhalations the pulse becomes fuller and recovers its tone, mental excitement abates, and the other symptoms of intoxication rapidly disappear. The etherisation should only be pushed to a slight degree of narcosis, and for this purpose the ether should be administered by the drop method on an open mask, so as not to hinder a free access of air to the lungs. The author claims to have succeeded by this method in the recovery of patients almost despaired of. He suggests that the same method would be applicable in cases of stovaine-poisoning.—*The Hospital*.

Cases and Comments.

Stenosis of the Larynx Caused by a Round Worm.

BY

T. A. SANKARANARAYANAN, M.B. & C. M.

Instructor, Royapuram Medical School.

The following is a case of some interest as it is not of common occurrence.

In October 1909, C.P.K., aged 30 years, male, Sub-Inspector of Police, under training at Vellore, was brought for treatment, for difficult breathing and recurrent attacks of suffocation and cough.

The history given by the patient who spoke in a hoarse voice and with dyspnoeic breathing was as follows:—

Two weeks previously, when he was apparently in good health, one night while asleep he got up suddenly with a sensation of something stuffed tightly into his throat. He felt suffocated intensely. Instantaneously an agonising fit of cough appeared and lasted for some minutes, but did not relieve his suffocation in the least.

This fit of cough recurred often the same night, and on the following two days. Phonation and deglutition were painful and brought on the attack easily. After a few days fits of suffocation and cough became less severe and occurred only at nights and whenever he attempted to swallow solid food. But the sensation of something stuffed into his throat was continuous and persistent. He was unable to take solid food, as it brought on severe fits of cough, with retching and vomiting.

Examination.—Patient was much exhausted with an anxious and careworn expression. Excepting the hoarse voice, with difficulty in talking and breathing, the condition of the patient was nothing *in extremis*.

Illumination of the throat revealed a congested and relaxed pharynx.

Laryngoscopy was performed with difficulty as the contact of the mirror with the throat brought on fits of cough and suffocation. With cocaine anæsthesia, a fairly satisfactory examination of the larynx was made. Epiglottis was unduly prominent and swollen, hiding from view, the interior of the larynx. On hooking it forwards, no view of the cords and the glottis could be obtained, and in their place, a glistening yellowish white mass was seen. Chronic œdema of the larynx causing serious stenosis was suspected.

An attempt to spray the part with adrenalin solution was made. It induced a severe fit of cough and spasm. Suffocation was severe that night, and when I saw him the next day he had inspiratory dyspnoea.

While attempting to get another view of the interior of the larynx, the mass seen inside it was dislodged accidentally by the hook, that was used to keep the epiglottis down. A fit of cough which started at that moment brought the mass out. It turned out to be a dead, dry, thin round worm five inches long, coiled like a watch spring. Patient was relieved instantaneously. Symptoms of irritation and inflammation of the larynx continued for some weeks, and disappeared under ordinary treatment.

This case is noteworthy, as it illustrates the remarkable toleration of a foreign body by the larynx "for indefinite lengths of time"—a fact, unknown till it was proved by O'Dwyer, and upon which his method of treatment of chronic stenosis of the larynx by laryngeal tubes depends.

Dermoid Cyst of the Ovary.

BY

J. DAVIDSON M.D., (EDIN.)

V.—Female, married, age 20, a Hindu woman (who had embraced the Roman Catholic religion) was recently admitted to Neyoor Hospital with a tumour in the lower part of the abdomen.

History.—A healthy child was born 2 years before, and was still living. Menstruation had been regular. For 8 months a tumour in the lower abdomen had been noticed. It was gradually growing larger. Three weeks before admission, the patient had severe pain in the region of the tumour and since that time there had been more or less pain in that region.

Examination:—By palpation a large abdominal tumour of about the size of a medium sized cocoanut was felt. It was evidently not uterine, but something closely connected with the uterus. It seemed to lie slightly to the left side of the middle line.

The tumour was hard, and structures like foetal head, ribs, etc., were palpable.

One thought of a "litho pædion" and Ectopic gestation with a dead foetus, but the history was not in keeping with this.

On bimanual examination the uterus was found to be normal. A large swelling was made out above and to the right side of the uterus seemingly connected with the right tube.

Operation:—Laparotomy was performed and a large cystic tumour found in the region of the right ovary. The pedicle had a half twist. Hence the greater prominence of the tumour on the *left* side of the middle line, though arising from the right side of the uterus.

The cyst was punctured and a yellowish mucus-like fluid evacuated. Some adhesions—both omental and peritoneal—were separated and ligatured. The cyst was again tapped and a large quantity of clear yellow fluid, like *liquor amnii*, escaped. The tumour was then delivered on to the abdomen, and the pedicle ligatured in 3 parts.

On section the tumour was found to contain hair, skin, bones and much sebaceous material. Some parts were distinctly like foetal structures, *eg.* an embryonic head, bones etc.

The tumour was, however, evidently a dermoid cyst of the ovary.

The abdominal wound healed by first intention.

A Case of Large Abdominal Abscess resulting from External Injury.

BY

SURGEON-MAJOR R. E. WRAFTER B.M.S. (*Retd.*)*Dehra Dun.*

A native female, aged 24, of the sweeper caste, and presenting an anæmic appearance. States that she was married in the year 1904 at the age of 16 years. She became pregnant and gave birth to a child during the same year. In 1906 she was severely kicked over the region of the abdomen when an immediate flow of blood took place from the vulva. Three days after having been kicked she was struck with a stick low down on the spine so severely as to produce unconsciousness which caused her to be laid up for some days subsequently. She had never freely menstruated up to some time in 1908 and then there was a stoppage for about five months when she experienced a sort of flooding which she thinks must have been a miscarriage. Since that time her catamenia has been regular but very scanty. In the month of August last she began to suffer from symptoms of dysuria attended with great bearing down pain in the pelvis when she noticed a swelling had commenced to appear in the hypogastric region which was brought to a head under native treatment till it burst, after which she felt comparatively well. Early in March of the present year, a second external swelling developed in the same situation extending from the pubes to the umbilicus, which was hard at first accompanied by painful micturition, but became soft dull on percussion, distinctly fluctuating and free from pain and tenderness on manipulation, showing that free suppuration had taken place.

The treatment adopted was chiefly local and partly constitutional. A longitudinal incision was freely made through the tissues over the mass, in the median line and a large quantity of foetid pus evacuated. Warm Linseed Meal poultices and Carbolic Oil were applied to the affected part and Boric Acid ointment dressing afterwards until the patient became convalescent.

Internally tonic medicines and nourishing diet were prescribed to increase her strength and give tone to the system.

Remarks.—The above is an interesting case of large abdominal abscess resulting from local injury to the spine which like an iliac abscess, may present in front of the abdomen above Poupart's ligament, and the antiseptic method of treatment chosen seems to have its advocates inasmuch as the patient progressed favourably with little or no pyrexia

following the operation. On the other hand most surgeons have probably seen cases in which large collections of pus have gradually become absorbed, as the patient's health improved and not remained pallid.

A Case of Difficult Labour.

BY

N. V. MOODALIAR, L. M. S.

Medical Officer, Magalvedha near Pandharpure.

At 11 A. M., 29-5-'09. S. N. A. was brought to this dispensary to be delivered. She is a poor widow and says she has been in pains for about two days; is well developed, short and fat, by caste a Brahmin, and says she comes from the Berars. She is a primigravida in the 9th month of pregnancy; is a poor woman, lost her husband when very young, and begs for her food. Membranes have not ruptured. There is head presentation and the child is living. Vagina was very narrow; 2 fingers could, with great difficulty, be introduced.

R.—Brandy m. 120.
Tinct. Digitalis m. 5.
Tinct. Nux Vomica m. 5.
Aqua Chloroform 3 i.
M. Statum.

to be repeated every 2 hours.

12 Noon—Give milk about 8 ozs.

4 P. M.—Give milk again as before.

As the pains were strong, os not dilating and hardly admitting 2 fingers, brandy was stopped and as she felt inclined to eat something, she was given milk, boiled rice and a little bread.

5 P. M.—Os not dilated; admits hardly 2 fingers; patient very uncomfortable, so morphia (grain $\frac{1}{4}$) was injected under skin. Before this was done urine was drawn off by a catheter and a large soap water enema was given which moved the bowels well twice.

7 P. M.—Slept pretty well for 2 hours. Feels much better; vomited twice.

8 P. M.—Same.

9 P. M.—Same.

10 P. M.—Is not willing to take any food or even milk for fear of vomiting; requests that if the entire child cannot be removed it may be cut up and then removed. Pains as before more or less severe.

11 P. M.—No sleep ; complains of much pain.

R—Chloral Hydrate gr. 15.
Pot. Bromide gr. 15.
Aqua Chloroform $\frac{3}{4}$ ii,
M. Statum.

30-5-'09.

2 A. M.—No sleep ; complains of much pain as before. Repeated Chloral Hydrate dose as before.

6 A. M.—No sleep ; pain as before. Inject Morphia ($\frac{1}{4}$ gr.) under skin. Took a cup of milk 1 hour before injection.

7 A. M.—Passed urine ; feels slightly better.

10 A. M.—Same. Pains continue more or less.

12 NOON.—Same. Took milk and rice.

3 P. M.—Same ; pains continue ; given Chloral Hydrate and Pot. Bromide as before.

6 P. M.—Same ; no better in any way ; pains continue. Given one cup of milk with Brandy $\frac{3}{4}$ i.

9 P. M.—Pains slightly more ; patient uncomfortable. Inject morphia $\frac{1}{8}$ gr. Took one cup of milk. Os as big as a rupee. Head at the brim ; membranes not yet ruptured. Caput succidanum felt easily. Head appears firmly fixed.

10 P. M.—No pain ; feels better.

12 P. M.—Slept for 2 hours.

31-5-'09.

2 A. M.—Took one cup of milk.

5 A. M.—No sleep from 12 P. M., but there was no pain.

6 A. M. Took one cup of milk.

7 A. M.—Pains commenced as bad as before.

8 A. M.—Pains very severe, unbearable ; morphia ($\frac{1}{4}$ gr.) injected under skin. Patient was after 15 minutes chloroformed and the child was extracted with great difficulty after performing craniotomy. The child was a female and was found dead before craniotomy. During anaesthesia, patient was very violent and required 6 persons to keep her on the table. She took in all 6 drachms of chloroform. Placenta was adherent and was extracted with some difficulty. There was some haemorrhage but not much. The parts were well washed, bandage applied, and the patient put to bed.

10 A. M. Bleeding slight as usual.

11 A. M.—Took one cup of milk.

1 P. M.—Took one cup of sago conji and milk. No haemorrhage ; discharge normal. Temp. 100.

2 P. M.—Same. Slept for about 3 hours.

4 P. M.—Discharge normal. Took a cup of sago conji and milk. Give Quinine Pill (3 gr.) one now and one at 6 P. M.

6 P. M.—Same ; passed urine.

8 P. M.—Ate rice and milk.

10 P. M.—Nothing particular.

1-6-'09.

5 A. M.—Slept well last night. Her saree was soiled with blood and much urine, and there was found in it a large piece of placenta and some blood clots. This piece of placenta was as big as the palm of the hand ; otherwise patient is doing well. Took one cup of milk and conji.

7 A. M.—Same. Temp. almost normal.

11 A. M.—Took milk and rice.

R—Quinine Pills 2 (3 gr.)

One now and one in the evening.

5 P. M.—Temp. 101. Discharge normal ; Passes urine ; complains of headache.

R—Caf. Citras gr. 4.
Feri Acetin gr. 4.
Pot. Bromide gr. 8.
Aqua Chloroform $\frac{3}{4}$ i,
M. Statum.

9 P. M.—Headache less ; feels better.

2-6-'09.

6 A. M.—Slept pretty well last night ; says she passed blood 3 times during the night, each time about 3 ozs. She does not remain in bed. Walks up and down in the rooms. Temp. 99. Vagina syringed with condy's lotion.

Took tea and bread.

R—Ext. Ergot liquid m. 60.
Aqua Chloroform $\frac{3}{4}$ ii.

M $\frac{1}{2}$ now and $\frac{1}{2}$ after 6 hours.

10 A. M.—Nothing particular.

12 NOON.—Ate her food as usual.

2 P. M.—External genital organs and thighs were washed well with soap and water.

4 P. M.—Bloody discharge slight.

9 P. M.—Same. Took her food as usual. Temp. 100.

3-6-'09.

7 A. M.—Did not sleep well ; discharge of thin bloody fluid continues ; has fever with chills. Temp. 100. Took sago conji as usual. Vagina syringed out with Condyl's lotion ; give Quinine Pills 3 (3 gr.) one ter in die. Syringing brought out some pus and bloody clots.

9 A. M.—Passed some more clots and a little pus.

12 NOON.—Took her food as usual ; discharge normal.

5 P. M.—Doing well. Temp. 99.

9 P. M.—Doing well ; discharge normal.

4-6-'09.

7 A. M.—Passed a good night. Took bread and milk. Discharge slight. Temp. 99.

9 A. M.—Breasts swollen and tense with milk ; so are painful.

Apply—

Liniment Belladonna $\mathfrak{z}$ i.

to breasts as directed.

Give—

Quinine Pills (3 gr.)

One morning and evening.

12 NOON.—Doing well ; ate her food as usual.

5 P. M.—Doing well ; discharge slight. Temp. 99.

5-6-'09.

7 A. M.—Passed a good night ; discharge normal, very slight. Took coffee and bread.

9 A. M.—Took a good warm bath.

2 P. M.—Doing well. Ate food as usual.

5 P. M.—Bowels moved twice ; motions semi-solid.

R.—Argenti nitras and opium pills.

($\frac{1}{8}$ gr. each) 3 ; one ter in die as directed.

9 P. M.—Had one liquid motion.

6-6-'09.

7 A. M.—Passed a good night. Had one liquid motion. Continue Argenti Nitras and Opium Pills as before.

10 A. M.—Bowels not moved. Doing well.

12 NOON.—Ate her food as usual. No purging.

4 P. M.—No purging. Doing well.

7 P. M.—Bowels moved once ; faeces solid.

7-6-'09.

7 A. M.—Slept well. Bowels moved once. Ate her food as usual.

12 NOON.—Doing well.

4 P. M.—Doing well.

9 P. M.—Bowels not moved. Doing well.

8-6-'09.

7 A. M.—Slept well. Bowels not moved.

R.—Ferri et Am. Citras gr. 15.

Aqua Chloroform $\mathfrak{z}$ iii.

$\frac{1}{8}$ part 3 times a day.

12 NOON.—Doing well.

5 P. M.—Doing well.

9 P. M.—Doing well.

9-6-'09.

7 A. M.—Doing well.

5 P. M.—Doing well.

10-6-1909.—Doing well.

11-6-1909.—Discharged cured.

After discharge I saw this woman twice within about 20 days. She was doing well. About the same time I had 2 more craniotomy cases, the operation being performed in the patients' houses, whereas the above case was treated as an inpatient.

THE ANTISEPTIC.

MAY, 1910.

His Late Majesty King Edward VII.



WE express our deep sorrow and disappointment at the unexpected death of our beloved King Edward VII. The sad news has cast a gloom all over the globe. India has lost a most benign ruler; the world has lost a friend, a philanthropist, who had a tender place in his heart for every human being, of whatever nationality or colour. He was the defender of all faiths, and of everybody's rights and privileges, especially of those of the weak and oppressed. The suffering minister laid low by disease, the soldier's destitute widow that lost her only prop of support in the King's service, and the crippled orphan that knew of no dear friends in a strange world,—these had all a friend in King Edward, in their hour of need. We may say without exaggeration that here was a king in the truest sense of the word—a king that made a conquest not of territories but of the whole world, and that conquest not by the sword but by the heart.

We Die to Eat and Eat to Die.

It has been truly said that "the platter killeth more than the sword." The latter does havoc in times of bloody war; but the former decimates the human race insidiously and quietly in times of reposeful peace. More than that, what requires extreme provocation in the one case to fall victims to each other's fury, requires in the other, nothing but a good-natured and docile digestive apparatus that will put up with any indignities it may be subjected to. The temptation to put an end to another's life is but momentary; and once such a deed is done, the perpetrator perhaps repents his act and is induced by his own remorse to refrain from any further adventures in martial homicide. But, how few of us can conscientiously say to ourselves—(whatever we may say to others)—that we have overcome that most enticing of temptations—the desire to

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partake of a first class dinner served up in the most elegant style—all which means a Bacchanalian orgy, more or less!

The penitent warrior that once had shed his brother's blood shudders at the thought of having to repeat his "patriotic duty." On the other hand, the sinning gourmand forgets all his past intemperance when brought face to face with what he thinks is worth living for. No feeling of compunction ever upsets him at that time; no dread of "gout" or of "diabetes mellitus" or other fauciful alarms of the physician will keep him from his feast. Like the trout that sees the fly and not the hook beyond it, the habitual glutton, once he gets hold of the idea of a coming feast, nibbles at it so to speak, and, after a hard and sometimes protracted struggle with his reasoning, in the end inevitably surrenders and resolves to swallow the bait. The time comes, and he swallows his dinner. But he swallows more than his dinner! Being thus heavily laden with the culinary atrocities of the season, our sufferer retires to a breezy corner to indulge in an hour (or more!) of post-prandial somnolence with all its horrors. The pleasure he had at the thought of the prospective dinner, and the pleasure of actually partaking of it, soon vanish; and he finally lands himself in a more or less dilapidated condition. Once recovered from an attack of acute gastritis, he vows to be good for ever thereafter. Vows, however, have their usual fate, and one attack of over-indulgence, only predisposes the individual to another. Another and yet another breach of the laws of Nature dooms him to habitual gluttony. No meal satisfies him unless his stomach walls are every time distended to their utmost limit; and every such successive distension only paves the way for yet larger meals! Or, not content with the juices Nature has supplied him with for digestive purposes, he invokes artificial aid for the performance of that function, and asks of the grunting pig his pepsin, or of the innocent calf his rennin or pancreatin.

Eleven months of the year he devotes to feasting on rich food and delicious wines, the rest of that period, to atoning for his past, by fasting, it may be, at a Spa, where he hopes to purge away his "bad liver", by submitting himself with extreme reluctance to a diet of restriction to the bitter emanations from those mysterious underground caverns. Occasional fasting is all very well; but to make the fast for a day a sufficient atonement for excesses carried on through the rest of the year, seems to us to be a real menace to good health and longevity. Moreover, in most instances, the fasting only sharpens the appetite and leads one into greater excesses than before. Prevention of the excesses, therefore, is to be our aim rather than the cure of the ills brought on by those excesses. A progressive society should look with as much abhorrence upon one

who eats more than is good for him, as upon one who drinks more than would keep him straight and sober.

Professor ELIE METSCHNIKOFF sees no reason why human life should not be capable of being prolonged to a period of at least a few centuries in a state of active efficiency, by perfecting our methods of living. If a machinery is put to a severe stress of wear and tear by being unnecessarily subjected to dissipations of its reserve forces, how can we expect it to last for any long period of efficient utility? If only each individual among us will so order his life as to conserve his reserve forces to the very last, METSCHNIKOFF'S millineum may not be far to reach. So far as our diet is concerned, we are very much lacking in the knowledge of what alone we should eat, and how much of these we should eat. Our want of success in framing rules for dietetic guidance so far, can be accounted for by our tendency to look too much for uniformity in the digestive capacities of different individuals, or, in other words, by our failing to recognize the fact that each man is a law to himself so far as nutrition is concerned. "What is one man's meat is another man's poison." This is true qualitatively as well as quantitatively. How then can we arrive at an estimate of the nutritive necessities and capacities of different individuals? If man is to be benefited by science he must make the best use of scientific methods and proven facts. Each individual should take in only just the minimum quantity of the proper foods that will keep him in an efficient state of health. This minimum quantity can be found experimentally for each of us by observing our daily intake and output of nitrogenous and carbohydrate materials. An analysis of the excreta in conditions of perfect health would give us a clue as to what foods and what quantities of them each is capable of assimilating without any strain upon either the organs of digestion or of those of assimilation and excretion. So long as such a standard is rigidly adhered to and never deviated from except for the changing necessities of growth or the failing powers of senility, we shall be getting nearer and nearer to the solution of the problem of longevity. Such an analysis of the products of metabolism will have to be made periodically in order to find out if our balance of nutrition is maintained at the proper level, or requires correction. The quality of food can also be adjusted by similar attention to the daily excreta. In a word, Science hopes to endow man with what he most desires—longevity—if only he will trust her and be guided by her laws as revealed in the modern researches. At the same time we are aware that there are not wanting those who would appear to prefer a short span of life with all its pleasures of excesses, to a prolonged period of existence deprived of those very attractions that make life so dear to man.

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Original Articles.

* A CLINICAL LECTURE ON FIVE CASES OF GASTRO-ENTEROSTOMY.

BY

RUTHERFORD MORISON:

Professor of Surgery in the University of Durham College of Medicine, Newcastle-upon-Tyne.



LAST Thursday (January 25th, 1910) I performed the operation of Gastro-enterostomy on 5 patients here. They were all suffering from Chronic Gastric and Duodenal Ulcer. As each case presents some feature of importance, and all five considered together offer a type of the conditions requiring operation for their cure, it seemed to me that the subject was a good one for this lecture.

All of these patients came with one complaint and called it "indigestion." It had troubled them "off and on" for years, and the majority had had good health in the intervals. The reason of their desire for surgical advice was that the ordinary medical measures which had relieved them before had failed to do so on this last occasion, and their doctor had said that an operation would be the best treatment.

In the majority of these cases the diagnosis can be definitely made in our own surgical wards, and at once, but if any doubt is felt the patient is transferred to the care and observation of my medical colleague, Dr. Drummond, before the question of any operation is considered.

For fuller particulars, than in the time at my disposal I am able to offer now, I would refer you to a paper on The Diagnosis and Operative treatment of Chronic Gastric and Duodenal Ulcer by Dr. Drummond and myself (*British Medical Journal*, July 10th, 1909.)

* Specially contributed to *The Antiseptic*.

The chief reliance in making a diagnosis, and of this alone I intend to speak, is placed on 3 symptoms and 3 signs.

The symptoms are :—Pain, Vomiting, and Bleeding.

The signs are:—Muscular Rigidity and Tenderness, a Tumour, and signs of Stomach Dilatation.

Each of these requires special consideration if mistakes are to be avoided.

Pain.—The typical *Pain* of Gastric and Duodenal Ulcer is related to food, is absent when the stomach is empty, is therefore removed by vomiting, and is relieved by rest and diet.

Vomiting.—The vomiting is related to the pain, is dependent upon food, and is arrested by careful dieting and rest.

It does not occur in typical Duodenal Ulcer.

Blood.—Repeated coffee-ground vomiting is the typical form of bleeding in gastric ulcer.

A profuse hæmorrhage followed by faintness, diarrhoea, and melæna is typical of Duodenal Ulcer.

The greatest importance is attached to Pain.

In Gastric it occurs earlier than in Duodenal Ulcer and is more dependent upon the quantity and quality of the meals.

A night pain is more common in Duodenal than in Gastric Ulcer. If it is in association with a gastric ulcer it means adhesion of the ulcer to the Pancreas. Probably the same explanation is true for the night pain of Duodenal Ulcer.

A paroxysmal pain resembling gallstone colic suggests ulceration in the neighbourhood of the Pylorus. (It is due to spasm and forcible contraction of the unstriated muscle).

Of *muscular rigidity* and *tenderness* I need say no more than that they suggest active ulceration.

A *tumour* and *dilatation* are evidences of advanced organic changes which can only be satisfactorily dealt with by operation.

In each case the diagnosis made was written down before operation so that it is possible to form a judgment of the result by comparison with the operative findings.

Case 1. Female. *M. W.* Aged 51. Married.

For 19 years she had attacks of "indigestion." They lasted as a rule for about 17 weeks and always came in cold weather. (Mr. Moynihan in his many excellent papers lays stress on this point.)

Pain came on from half to one hour after food. It was worse when she was hungry, was relieved for a little by taking some light food, and was removed by vomiting, which, however, did not occur often. *A heavy meal made the pain worse and brought it on sooner.* (A distinguishing point between Gastric and Duodenal ulcer). Until the last 6 weeks the pain had not troubled her at night, nor was it present before breakfast in the morning. (Important in diagnosis of Ulcer). Since that time it has *wakened her about midnight* (adhesion to Pancreas) and she was most comfortable when lying on her back.

When at her worst she vomited three times a day never more than a pint at a time and never anything that she had eaten the day before (absence of dilatation).

On three occasions she had vomited blood; the illness commenced nineteen years ago with blood-vomiting; the last time it occurred was five years ago. The blood was coffee-coloured at first, but later was bright red and about one pint at a time. On the first occasion (nineteen years ago) she also passed blood with the stools.

On admission:—She was pale, thin (she had lost a stone in weight during the last six weeks) and ill-nourished with a subnormal temperature and soft pulse. She was seven weeks in bed before coming into the Infirmary but had not improved.

There were no definite physical signs.

Diagnosis.—Chronic Gastric Ulcer on the lesser curvature and adherent to the Pancreas.

The operation showed:—A large chronic lesser curvature ulcer adherent to the Pancreas and causing considerable hour-glass contraction of the stomach.

Case 2. Man. *T. S.* Aged 39. Married.

For 12 years had "attacks of indigestion" coming on twice a year and keeping him from three to four weeks off work. He was quite well and could eat anything in the intervals.

Epigastric pain came on one hour after food and was relieved if he took something more to eat. The pain was worse after a heavy meal (suggests stomach not duodenal ulcer) but he had not noticed that it

commenced any earlier. The pain had never been present before breakfast (*i.e.*, when stomach was empty) but occasionally wakened him up about 2 A.M. and was then relieved by eating something or by doubling himself up.

He had two attacks of vomiting, each lasting for a week, during which all that he took returned. Vomiting always relieved the pain. On one occasion he vomited a clot of blood and several times coffee-ground matter. The same stuff had been passed from his bowel.

The first attack and every other till the present one were cured by rest and milk diet.

On admission:—The patient looked anæmic and in poor condition. He had lost nearly three stones in weight and had been off work for eight weeks with his present attack.

There was rigidity of the upper part of the right Rectus muscle and a tender spot underneath it.

The *diagnosis* made was:—

An ulcer on the stomach side of the Pylorus and on the lesser curvature of the stomach.

The operation displayed a large Chronic ulcer on the lesser curvature of the stomach. It was hard and the Peritoneal covering was markedly puckered over it. There was no adhesion to the Pancreas.

Case 3. Man. J. W. Aged 47. Married.

For seven or eight years he had attacks of "indigestion." They were worse during the last two years but he was always much better in summer. During the last ten weeks he had never got a satisfactory night's rest.

Pain occurred from two to two and a half hours after food. It was always relieved by taking food so that he ate about every three hours to keep it away. There was no pain before breakfast, but he was frequently awakened about 11 P.M., and had to get up for food. He was much disturbed at night and often had to walk about and take food to relieve the pain. Occasionally doubling himself up brought some relief. The pain was always worse after a heavy meal and was immediately relieved by vomiting, which, however, was infrequent. He had occasionally induced it to relieve the pain. He had vomited dark coffee-ground material on three occasions, once as much as two quarts. No blood that he knew of had ever passed from the bowel.

The last attack of ten weeks duration had been worse than any before and had resisted the remedies previously tried.

On admission:—He was pale and in poor condition. (He had lost two and a half stones in weight during the last year.)

There was marked rigidity of the upper part of the right Rectus and evidence of considerable dilatation of the stomach.

Diagnosis:—Pyloric ulcer adherent to the head of the Pancreas causing obstruction of the Pylorus and dilatation of the stomach.

The operation showed extensive ulceration involving the Pylorus, extending down the Duodenum and causing obstruction from cicatricial stricture of the Pylorus and Duodenum and Dilatation of the stomach.

The Duodenal portion of the ulcer was adherent to the head of the Pancreas.

Case 4. Female. K. S. Aged 39. Married.

For two years she had "indigestion."

Pain commenced about one hour after food in the middle line of the epigastrium. It was always relieved by vomiting and never by anything eaten. There was no pain at night unless it had continued into the night from the day before. She never had pain before breakfast. Heavy meals caused more pain than light ones. Rest and a fluid diet had always till now improved her condition.

At first vomiting occurred after every ordinary meal. For the last three months it only occurred once a day, towards evening, sometimes not so often. The vomited matter now often amounted to two quarts or more and was foul-smelling, frothy, yeasty in nature, and she had noticed in it food taken the day before (evidence of dilatation and stagnation). She had never, so far as she could tell, vomited blood or passed any in the motions.

On admission:—She was thin, looked very ill, had a quick feeble pulse and a temperature of 99.4 F. She had lost seven stones weight in two years and now weighed only five st. five lbs.

Physical examination showed by inspection and palpation a small round moveable lump under the upper part of the right Rectus muscle (an ulcerated thickened Pylorus) which descended on forced inspiration and moved up on expiration. A large quantity of foul matter was washed out of her stomach.

Diagnosis.—Dilated Stomach, Pyloric Ulcer and Stricture.

The operation showed a tight stricture of the Pylorus with ulceration extending into both Stomach and Duodenum and adherent to the Pancreas.

Case 5. Man. J. R. Aged 29. Married.

For eleven years had "indigestion" coming on in attacks which left him intervals of perfect health during which he could eat anything. He was ill for three months of the year (August, September, October) but always if he got cold had pain.

Pain commenced three or four hours after food in the left side. It continued until he ate something which always gave relief. After a heavy meal the pain took longer to come on (suggests Duodenal as opposed to Gastric Ulcer) but was more severe when it did come.

He had pain before breakfast when he was hungry. The pain always came if he felt hungry (Moynihan's "hunger pain" a characteristic of Duodenal Ulcer). For the last twelve months he had pain at night which wakened him regularly between 2 and 4. A.M. This was relieved by something to eat or drink and he was more comfortable when lying on his abdomen. He had never vomited and had passed no blood with his motions.

On admission :—He looked healthy and well nourished. He had been worse than usual and off work for five weeks and had lost one and a half stones weight since August.

There was well-marked rigidity of his right upper Rectus and a tender spot on deep pressure underneath.

Diagnosis :—Duodenal ulcer with adhesion to the Pancreas.

The operation showed a hard ulcer in the first part of the Duodenum constricting its lumen and adherent to the head of the Pancreas. The stomach was thick-walled and somewhat dilated.

TREATMENT OF BRIGHT'S DISEASE.*

BY

JOGENDER LALL CHANDRA, L. M. S.

Late Prof. of Anatomy, College of Phys. and Surg., Calcutta.

Bright's Disease is a diffuse specific nephritis characterised by albumenuria, casts, etc.

The disease may be clinically divided into two groups, viz :—

1. ACUTE BRIGHT'S DISEASE.
2. CHRONIC BRIGHT'S DISEASE.

It is certain heredity is a potent factor in the production of nephritis. Mental depression and nervous exhaustion are the predisposing causes of this disease.

* Specially contributed to *The Antiseptic*.

1. *Acute Bright's Disease* is an acute diffuse nephritis due to action of cold or toxic agents upon the kidneys.

2. *Chronic Bright's Disease* is a chronic nephritis. Clinically two groups are recognised :—

(i) *Chronic Tubal or Parenchymatous Nephritis* is characterised by marked dropsy, large amount of albumen, high specific gravity, scanty urine and *post mortem* by the *large white kidney*. In the latter stages of this process the kidney may be smaller—a condition known as the *small white kidney*.

(ii) *Chronic Granular or Contracted or Interstitial Nephritis* is characterised by absence of dropsy, trace of albumen, low specific gravity, polyuria, and later, renal fibrosis and secondary cardio-vascular changes, viz., hypertrophy of the heart and thickening of the arteries, are established.

Classical Symptoms of Acute Bright's Disease :

1. Puffiness of face.
2. High coloured scanty urine which contains albumen, blood and tube-casts.
3. Dull pain on the loins.
4. Vomiting may be present.
5. Temperature is high generally in children.
6. Subsequently hardness of pulse and general anasarca ensue.
7. In later stages dropsy and anæmia are well marked. The visible characters to the disease—the bloated pallor and the water-logged carcass—are very characteristic.

Classical Symptoms of Chronic Parenchymatous Nephritis :—

Following an acute nephritis, the disease may present in a modified way, the symptoms of that affection ; in many cases it sets in insidiously. *Uræmia* is the common termination.

Uræmia may be defined as a toxic condition arising usually in cases of acute or chronic renal disease. It is allied to other toxic states, such as acetonæmia and cholæmia.

There are two forms of Uræmia—Acute and Chronic.

Acute Uræmia :—

Prodromata are :—

1. Headache especially occipital.
2. Nervous complaints :—
 - (a) Cramps in legs.
 - (b) Numbness or tingling in limbs.

- (c) Paralysis.
- (d) Uræmic amaurosis (blindness).
- (e) Deafness.

3. Fœtor in breath.
4. A foul tongue.
5. Loss of appetite.
6. Drowsiness.
7. Itching of skin is the result of natural excretion of urea through sweat glands.
8. Pulse slow.
9. Temperature subnormal.

Symptoms are :—

1. Clonic convulsion; muscles are alternately relaxing and contracting.
2. Unconsciousness.
3. Expiration ends in a peculiar whistling noise whereas in apoplexy the breathing is stertorous.
4. Coma supervenes.
- ii. Chronic Uræmia.

Clinically two forms are noted:—

- i. Asthmatic.
- ii. Dyspeptic.
1. Asthmatic Uræmia.

Uræmic dyspnœa is classified by Palmer Haward as follows:—

- (a) Continuous dyspnœa.
- (b) Paroxysmal dyspnœa.
- (c) Both types alternating.
- (d) Cheyne-strokes breathing.

The attacks of dyspnœa are nocturnal; the patient generally sits up in bed; it is called in popular language 'renal asthma.'

Cheyne-stroke breathing :—

Instead of the ordinary inspiration and expiration occurring with regularity there are alternate periods of apnœa (during which the breathing fades away to nothing) and dyspnœa during which the breathing becomes extremely marked. The term 'Cheyne-stroke' breathing is called after two Dublin Physicians—Dr. Cheyne and Dr. Strokes.

Blood pressure is best measured by Martin-Riva-Rocci instrument.
During period of Apnœa 230.
During period of Dyspnœa 240.

ii. Dyspeptic Uræmia:—

- (a) Vomiting of cerebral type.
- (b) Hiccup.
- (c) Diarrhœa profuse with ammoniacal smell.

The classical symptoms of chronic parenchymatous nephritis are:—

1. Symptoms of acute Bright's disease.
2. Uræmic symptoms are common, though convulsions are less frequent than in interstitial nephritis.
3. Cardio-vascular changes are less common.

Heart may be hypertrophied, though there are instances in which the heart is not enlarged.

The tension of pulse is usually increased.

4. Retinal change is less frequent than in chronic interstitial nephritis.

5. Gastro-intestinal symptoms are common.

Theories of Uræmia :—

1. Retention of, or intoxication by
 - (a) Urine as a whole;
 - (b) Keratinin;
 - (c) Carbonate of Ammonia;
 - (d) Potassium Salts;
 - (e) Chlorides.
2. Anæmia of the Brain (Traube's theory)—
 - (a) Dependent on œdema brought about by the spasm of vessels of certain cerebral areas;
 - (b) Dependent on a poison;
3. Due to high arterial tension.

Chronic Interstitial or Granular Nephritis:—

The pathology is an overgrowth of the interstitial, intertubular or fibroid tissue as the result of a slow process akin to inflammation.

The overgrowth is succeeded by contraction and the compression of the tubes and malpighian bodies to their gradual atrophy and partial extinction.

There may be no symptoms whatever to suggest to the patient the existence of a serious malady.

The only safe rule is to examine urine carefully in every case.

The writer quotes the language of Sir William Gull: "What can a doctor know about a man, if he knows nothing about his urine?"

The classical symptoms are :—

1. Urine of low specific gravity, occasional hyaline or granular cast, polyuria and mere trace of albumen.
2. Dropsy is usually absent.
3. Dyspnœa, *i.e.*, breathlessness on exertion.
4. Pulse of increased tension, hard and incompressible, due to "in the arterial side of the vascular system, resistance in front and increased pressure behind."—*Sir H. W. Broadbent*.
5. Heart is affected; hypertrophy of left ventricle; the second sound at the aortic area is ringing in character and is accentuated,—a very characteristic sign of increased tension. The apex beat of the heart is dislocated to the left.
6. Severe vomiting or diarrhœa may be the first sign.
7. Mental conditions associated with Bright's Disease :—

Renal cirrhosis is frequently associated with adhesion and thickening of the dura mater. The pia mater is also apt to be thickened and opaque, and in some instances adherent to the cortex cerebri. When this is the case the lymphatic or vascular circulation is so impaired that symptoms of cerebral and mental degeneration appear.

Renal disease, therefore, is associated with insanity in two ways :

- (i) Acute, transient delirious mania, an acute toxæmia, or uræmic insanity.
- (ii) A progressive cerebral degeneration, with chronic renal disease as the primary cause. (Special Bright's Disease Number, *Practitioner*, Nov. 1901).

8. Cerebral apoplexy, epistaxis, retinal hæmorrhage, etc.

High blood pressure for a considerable length of time tends to arterioles of the brain, nose, etc., becoming diseased; a condition of periarteritis is apt to be developed and minute miliary aneurisms are apt to form on these arterioles. The rupture of these minute aneurisms is the cause of epistaxis, cerebral hæmorrhage, etc.

9. Albumenuric retinitis is a complication during the late stage of the disease.

The cardinal symptom is sudden dimness of vision.

10. Eczema is a common accompaniment.
11. In later stages when the heart fails, the quantity of albumen may be greatly increased.

"Acute uræmia is perhaps the most typical mode of termination of this form of Bright's Disease." (J. BRADFORD in *Practitioner*, November 1901, page 518.)

Physicians should keep in mind three points regarding the treatment of this grave malady, *viz.* :—

- (i) Medical;
- (ii) Dietetic;
- (iii) Hygienic.

Medical Treatment of Acute Bright's Disease :—

Remember the following golden rules :—

1. to abate renal hyperæmia;
2. to avoid renal irritants (cantherides should not be put on any part of the body, for it is absorbed and excreted by the kidney);
3. to give physiological rest to the kidneys without irritating the gland.

(A) By maintaining an abundant flow through the tubes :

Distilled water, barley water, lemonade, are recommended for this purpose.

The following indigenous decoction is worthy of a trial, *viz.* :—

Decoction of white "punarnava" (*Berhaavia Diffusa*) and old "mula" (*Raphanus Sativus*—Garden Radish), twice a day.

N.B.—"Powerful diuretics must harm the kidney and therefore they should not be given."—*HALK WHITE of Guy's Hospital*.

The writer recommends the following formulæ :—

R.—Liq. ammon. citratis 3 ij.
Pot. Citras. gr. x.
Sodi citras. gr. v.
Inf. Digitalis ʒi.
Inf. Buchu ad. ʒi.

M. ft. for a dose. Sig : one four times a day.

N.B.—Digitalis is employed without risk when the arterial tension is low and the cardiac impulse is not forcible.

The advantages of this mixture are :—

- (a) it is a mild blood diuretic.
- (b) it keeps the urine alkaline.

Fatty casts will, owing to the formation of soaps, come away more readily when the urine is alkaline.

(B) By keeping the skin active.—

(i) Keep the patient in a warm bed, in a warm room.

There is nothing better for keeping the skin at an uniform warm temperature than bed, and in Acute Bright's Disease the natural relationship between the skin and the kidneys is particularly delicate, and even a slight cooling of the skin may greatly increase the renal disease.

The stay in bed should be absolute until a week after the albumen has disappeared.

Another reason for keeping the patient in bed is that Acute Bright's Disease is a febrile disorder.

The temperature of the sick room should be constantly at 65° F.

(ii) The flow of sweat can be much increased—

(a) by hot drinks, hot soda, hot lemonade ;

(b) by hot bath ;

(c) by hot air bath ; (the usual duration of a hot bath is 15 minutes) ;

(d) by wet pack ;

The patient is wrapped in a sheet which has been wrung out in warm water, and over which several blankets are wrapped. After 20 minutes the sheet is removed, and the patient dried, and then he is wrapped in more hot blankets.

(e) by subcutaneous injection of pilocarpin gr. $\frac{1}{16}$.

(C) By keeping the bowels free.

The following are recommended :—

(a) Occasional dose of mercurial purge or compound jalap powder or compound scammony powder to be given at night.

(b) Sulphate of Magnesium or Soda in the morning.

R—Mag. Sulph. ℥ijs.

Soda Sulph. ℥ijs.

Glycerine m. x.

Aq. Aurenti Floris ad ℥i.

Mft. for a dose.

Treat the patient symptomatically :—

1. Oedema of legs :—

(a) Horizontal posture must be strictly maintained when the legs are affected.

(b) Periodical local hot air baths are good.

N. B.—Puncture of the legs should be avoided.

2. Sleeplessness :—

Chloral Amide, grains 20, is best.

N. B.—Avoid Sulphonal, Trional and Tetronal as they lead to hæmato-porphynuria. (HALE WHITE).

Avoid opium.

3. Anæmia :—

Organic preparation of Iron is good.

It should not be given until the acute symptoms have subsided.

4. Suppression of urine :

(a) Dry cupping on the loin.

(b) Hot fomentation with bran poultices.

Dietetic Treatment of Acute Bright's Disease :—

1. Milk is the staple food ; it is milk and nothing but milk in some form that should be the standard diet.

The advantages are :—

(a) it does not irritate the kidneys ;

(b) it is particularly suitable for fevers ;

(c) it is easily digestible ;

(d) it washes out the renal tubules and so gets rid of all the epithelial debris that blocks them.

Butter milk is good.

2. Carbohydrates, when given in fever, save the tissues of the body (*May's Experiment*), hence gruels made of arrowroot or oatmeal, barley water, are recommended.

N. B.—Avoid meat, alcohol, opium, too much water, salt and salted food.

PROF. VON NOORDEN remarks that copious water-drinking should be avoided in acute and sub-acute nephritis—conditions in which the kidneys require as much rest as can be obtained with safety to the rest of the body.

As convalescence is established, bread and butter, issinglass, pudding of Chinese grass flavoured with rose water and black pepper, and fruits, *e.g.*, grapes, oranges, pomegranates, are allowed.

The writer recommends the following indigenous diet :—

Equal parts of fried reddish, "Atap" rice and black "til," to be made into a ball with a little honey, and to be taken with reddish "ram" plantain or "katali" plantain, twice a day morning and evening.

Medical Treatment of Parenchymatous Nephritis.

Essentially the same treatment should be carried out as in Acute Bright's Disease. It frequently results from an uncured acute attack.

The most striking thing is the extent of the effusion of fluid into the connective tissue and the serous cavities of the body.

Writer's favourite formula :—

1. R—Ferri et Ammon. Citras 3i.
Liq. Ammon. Citratis 3i.
Ext. Apocynum liq. 3i.
Liq. Strychnine Hydroch. m.xxiv.
Glycerine 3vi.
Aq. Distil. ad 3viii.

Mft. Put 12 marks. Sig. one thrice a day.

2. If there be tinge of malaria :—

- R—Ferri et Quinine Cum Strychnine Citras 3i.
Liq. Ammon. Citratis 3i.
Ext. Apocynum liq. 3i.
Glycerine 3vi.
Aq. Distil. ad 3viii.

Mft. Put 12 marks. Sig. one thrice a day.

3. R—Stronchium lactate gr. iij.
Tannalbin gr. ii.
Ferratin gr. iss.
Ext. Lycopi gr. iii.

Mft. for a pill. Divide it into two pillets. Sig. two thrice a day.

Stronchium lactate lowers blood pressure, does not cause renal irritation and causes diuresis by dilating the blood-vessels of the kidney; usual dose being 5 to 30 grains.

4. If Nephritis be of a hæmorrhagic type—

Methylene blue gr. ii in pill form twice a day, acts well.

5. If Anæmia be a marked symptom, prescribe iron in the shape of *albuminate of iron* :

- e. g. (a) Feralboid : dose being $\frac{1}{2}$ – $\frac{1}{4}$ gr.
- (b) Ferratin : dose being 1–2 gr.
- (c) Liq : Hæmo-ferrum : dose being 1 drachm.
- (d) Homell's Hæmatogen : dose a teaspoonful.
- (e) Vin de Hæmaglobin : dose a teaspoonful.
- (f) Iron Somatose : dose a dessertspoonful.
- (g) Pepto fer : dose a teaspoonful.

6. If dropsy be acute, use any of the following :—

(a) Diuretin : usual dose 5 to 15 grs. dissolved in milk.

The writer recommends the following formulæ :—

- R—Diuretin gr. xv.
Caffeine Citras gr. ii.

Mft. for a pulv. To be given in cachet. Sig. one every 6 hours.

(b) Theocin-Sodi Acetate—usual dose is 4 grs. in solution and to be taken after meal. It is sold in the market by the name of "Theocinoid" Tablet.

(c) Agurin—usual dose 15 grs. It is less powerful than Theocin-Sodi Acetate, but more lasting in its action; it is best given in cachet. "Agurin" Tablets can be had.

(d)

- R—Tinc : Ferr : Perchloride m x.
Mag : Sulph. 3 i
Inf : Digitalis 3 i
Aq : Chloroform ad. 3 iv.

Mft. for a dose. Sig. one every half hour.

In the Carlsbad Congress for International Medicine PROF : VON NOORDEN has remarked :—

(1) The first point is the prohibition of red meat as contrasted with white for which he can find no scientific basis, and he points out that the highest creatin values are in the white meat of chicken and rabbit. He thinks if the quantity is duly regulated any kind of meat may be allowed.

(2) The second point is the routine prescription of large quantities of milk, mineral water, &c., with the object of "flushing the kidneys" and promoting the elimination of urea. $1\frac{1}{4}$ to $1\frac{1}{2}$ litres of fluid per diem is allowed, while large quantities of fluid (3 to 4 litres) overload the heart and lead to its dilatation.

(3) The third point is to preserve the heart's vigour by Nauheim baths and exercises.

Dietetic Treatment of Tubal Nephritis :—

The diet of sufferers from this disease is frequently misunderstood, for they are kept too rigorously to milk.

The disadvantages according to James Anders, *Philadelphia County Medical Society*, Nov. 1902, are two-fold :—

1. Undue general weakness is prone to result from long continued restriction to milk.

2. Ingestion of massive quantities of fluid by overfilling the blood vessels, increases markedly the blood pressure.

Per contra the writer is in favour of the use of an abundance of milk within the bounds of safety to the cardio-vascular system. Hence a mixed diet of Carbohydrates with milk is best.

The following is an ideal menu of diet as sketched by the writer :—

6 A.M.—3 ozs. of mineral water with equal quantity of hot water to be taken by sips, or the following formula :—

R.—Mag. Sulph. ℥ij.
Soda Sulph. ℥ij.
Glycerine m. xv.
Aq. Auranti Florid ℥ i.

Mft. for a dose.

8 A.M.—Milk or debuttered milk 6 oz.

10 A.M.—Washed bread pap and milk, or

Powder 'man' and milk, or

Flour of 'Panifal' and milk, or

'Khai' (fried paddy) and milk, or

"Banana" powder and milk, or

Soti powder and milk.

A dose of Iron.

12 NOON—Debuttered milk, 8 oz.

2 P.M.—Fruit juices, *e.g.*, pomegranate, grapes, etc.

4 P.M.—Agar agar pudding of milk flavoured with rose water and pulv. black pepper.

6 P.M.—Plasmon and milk, or

'Soje,' and milk, or

Sago and milk.

8 P.M.—A glass of milk.

Avoid common salt, too much water and meat.

Medical Treatment of Ch. Interstitial Nephritis:—The disease is not to be cured, nor has any tendency to recovery.

The principle of treatment should be :—

1. To modify the circumstances and habits of the patient and to minimise the work of the irritated gland.

2. To prevent the accumulation in the blood of retained excrementitious products.

Diuretics are not indicated as Nature is producing diuresis; the patient is passing more water than normal.

The following methods are recommended :—

(i) Purgation :—

(a)

Pulv. Jalop Co. gr. xxx at bed time and a good dose of Mag. Sulph. in the morning.

(b) R.—Sod. Pot. Tartaras
Pot. Acetas aa ℥ i

Dose : A dessert spoonful in hot water early in the morning.

(c) "Imperial Drink." It consists of a drachm of Acid Potassium Tartarate, a grain of Saccharine and three minims of Oil of Lemon to a pint of boiling water. It should be drunk cold.

(ii) Diaphoresis, *e.g.*—

(a) Warm bath.

(b) Vapour bath.

(c) Hypodermic Injection of Pilocarpine gr. $\frac{1}{4}$.

3. To reduce blood pressure :

(a) Venesection.

(b) Purgation as mentioned above.

(c) Nitritis, *e.g.*, Nitrate of Sodium or Nitro-Glycerine internally, Amyl Nitras inhalation.

RINGER speaks very strongly in favour of the use of large doses of Iodide of Potassium.

American physicians recommend Chloride of Gold and Sodium.

Treat the Patient Symptomatically :—

1. Head-ache.

(a) Nitro-Glycerine Tabloid.

(b) Solution of Trinitrine (1 in 100).

(c) Nitrite of Sodium.

(d) DR. BRADBURY advocates the use of Erythrol Tetranitrate.

(e) Caffeine Citras.

The patient should, if possible, be kept in a quiet dark room, but previous to this a hot bath should be given. Caffeine may be advantageously combined with some Nitro-Glycerine (PROF. HALLE WHITE.)

(f) When headache is associated with pain of a Neuralgic character, PROF. NESTOR TIRARD recommends Antipyrin and Antifibrin.

2. Sleeplessness.

Hot foot bath just before going to bed and by wrapping the feet in warm blankets so as to further maintain the freedom of circulation.

(a)

R—Chloral Amide gr. xv-xx.
Vin. Gallaci ℥i.
Aq. Auranti Flor. ℥i.

Mft. for a dose. Sig. to be taken an hour before bed-time.

(b)

R—Sulphonol gr. x.
Trional gr. x.
Vin. Gallac. m xx.
Hot Soup ad. ℥ii.

Mft. for a dose : Sig. to be taken before retiring.

3. Dyspepsia :—

R—Glycerine Acid Pepsin ℥j.
Acid Hydrocyanic (Dil) m.i.
Aq. Carni. ad. ℥i.

Mft for a dose : Sig one twice a day after meal.

4. Vertigo of Arterio-Sclerosis :—

DR. CHURCH, in *Medical Record*, June 1892, recommends Pot. Iodide.

5. Cardiac debility :—

R—Caffein Citras gr. i
Pulv. Digitalis gr. ½.
Ext. Nucis Vomica gr. ½.

Mft. for a pill : Sig. one thrice a day.

6. If Cardiac tonic is required a tabloid of Trinitrine and a tabloid of Tinc : Strophanthus m. v to be taken thrice a day.

7. If blood tension is high :—

- (a) A tabloid of Nitro-Glycerine thrice a day.
- (b) Pot. Iodide gr. x thrice a day.
- (c) Erythrol Tetranitrate.

8. If hæmorrhage happen :—

The mere hæmorrhage is of itself rarely dangerous; indeed, it is often beneficial in so far as it lowers blood pressure.

Remember the following golden rules :—

- (a) Keep the patient quiet.
- (b) Open bowels by Jalap Co., followed by Mag. Sulph.
- (c) The head of the bed should be raised.

N. B.—Ergot in particular should be avoided as it raises the blood pressure.

9. Uræmia :—

Physician should stamp in his mind the following points :—

(i) To lower the blood pressure by

(a) Venesection.

(b) Epistaxis, a Nature's method of lowering blood pressure. It is, so to speak, a safety valve, and it will do the patient good rather than harm.

(c) Free watery purgation.

(d) Lumbar puncture or even trephining. (B. BRAMWELL.)

(ii) To evacuate the uræmic-producing poison from the system by—

(a) Purgation.

(b) Diaphoresis.

(iii) To palliate the symptoms by appropriate remedies, e.g.

Uræmic convulsion, renal asthma, etc.

Uræmic Convulsion :—

1. Prompt purging and sweating must be had recourse to.

2. Venesection if pulse be hard.

3. If convulsion be very violent :—

(a) Inhalation of chloroform.

(b) Inhalation of oxygen.

(c) Chloral Hydras and Bromide by mouth or rectum.

N. B.—Avoid opium and its derivatives.

It was STEPHEN MACKENZIE who advocated the use of Morphine in Uræmic Convulsion. Professor OSLER speaks highly of its use "in the dyspnœa of Cheyne-Stokes breathing of advanced arterio-sclerosis with Chronic Uræmia."

Renal Asthasma :—

Physician has to keep in mind two points, viz :—

1. The immediate relief of the spasm by—

(a) vaso-dilators, e.g., inhalation of Nitrite of Amyl. or Nitro-Glycerine internally;

(b) stimulants either ethereal or alcoholic.

2. The mitigation of the uræmia as early as possible, i.e., to purify the blood and at the same time reduce arterial tensions by—

(a) purging, e.g., elatrium ;

(b) sweating, e.g., air bath, philocarpin.

N. B.—Wet cupping over the loins is a remedy of undoubted value, but dry cupping and poulticing the lumbar region are both equally useless.—CAIGER in Special Bright's Disease Number, Nov. 1901, page 537.

Uræmia of Acute Nephritis:—to be treated by sub-cutaneous injections of saline solution.

In the Treatment of *Uræmia* BROWN-SEQUARD recommends renal extracts.

By such anti-uræmic treatment the attacks can often be held at bay with long intervals of peace until the patient finds leisure to die quietly in some other way. Remember also that uræmia threatens on one side, while anæmia is to be feared on the other.

Dietetic Treatment of Granular Kidney:—

Put the patient on a diet which does not throw a strain on the kidney, *e.g.*, milk, milk food, bread, oatmeal porridge, well cooked tender vegetables and properly cooked fruits; eggs in moderation are allowed; avoid alcohol, meat white and red: (Read Professor VON NOORDEN'S remark about meat as sketched above). Nitrogenous food, which supplies the bulk of the renal excreta, should be reduced to the lowest amount compatible with health.

DR. F. M. THORNHILL emphasises the fact, not too well known, that the ability of the kidneys to eliminate poisons is greatly reduced in the various forms of Bright's Disease, though it is not often a cause of death. A man can live so long as there is left in him the equivalent of two-thirds of one kidney. But when degeneration of the kidneys has gone so far that the amount of kidney tissues is reduced to less than this the patient dies from the accumulation of poisons in his blood and tissues. From these facts it is evident that foods which contain urea or uric acid, and foods which give rise to these excretory substances, should be carefully eliminated from the dietary of persons suffering from Bright's Disease. By this means the kidney collapse is postponed. DR. THORNHILL advises the entire disuse of meat of every sort, also eggs, and recommends a diet consisting of cereals, fruits, fresh vegetables, with milk and cream. It may be added that butter-milk is in such cases in every way preferable to ordinary milk.

J. E. FERRAN (*Journal American Medical Association*, February 20, 1897) recommends an exclusive fish diet especially those containing most rodine.

The following is the ideal menu of diet:—

- 6 A. M.—A glass of mineral water 3 to 4 ozs.
- 8 A. M.—Oatmeal porridge and milk or fresh juice of Palm tree.
- 10 A. M.—Rice or bread pap:
Fish stew and milk.
- 12 Noon—A glass of cocoanut water.
- 2 P. M.—Debuttered or fermented milk 8 ozs.
- 4 P. M.—Fruits, *e.g.*, pomegranate, orange.
- 7 P. M.—Thin 'Soji' bread, vegetable and milk.

Diet plays an important part in the role of Bright's Disease:—

The writer cannot help quoting the advices of DR. W. B. WARINGTON in the *Practitioner*, Aug. 1909.

The principles of treatment are three in number, which the physician should stamp in his mind, *viz*:—

- (i) to protect and rest the renal tissue.
- (ii) to relieve and sustain the heart.
- (iii) to keep up the vitality of the patient.

The author classifies diet as follows:—

- 1. The amount of fluid.
- 2. The pure milk diet.
- 3. The lacto-vegetarian diet.
- 4. The chloride poor diet.
- 5. The nitrogen poor diet.
- 6. Special articles of diet.

- 1. The amount of fluid must be restricted to as little as possible; water increases œdema, hydræmia and work of the heart.
- 2. Milk is the chief article of food.

Its advantages are:—

It is a complete food, easily digested and does not cause alimentary fermentation, except perhaps lactic-acid fermentation; it favours diuresis on account of its water, certain of its salts and its lactose; it is relatively poor in sodium chloride.

Its disadvantages are:—

It contains excess of proteid and fat which the patient cannot digest; it is poor in iron and its prolonged use causes great distaste for food.

3. Add to the milk food stuffs which are poor in Sodi Chloride and proteid, but rich in Carbohydrates, *e.g.*, rice, arrowroot, sago, etc.

4. Sodium Chloride is necessary to animal life, and the body tissues are bathed in a fluid which contains about 5 per cent of Sodium Chloride.

In health the renal activity maintains the level, while in Acute Bright's Disease this equilibrium is disturbed.

MARIE'S hypothesis:—

There is a *cholure fixe*, in which the Sodium Chloride is chemically fixed by the tissues themselves. It occurs in the primary stages of œdema, and may persist even after the occurrence of a diuresis; but when the tissues become saturated, the Chlorides accumulate in the tissue fluid and œdema follows: this is the *cholure libre*.

5. Nitrogen poor diet.

According to VON NOORDEN the *nitrogenous bodies*—urea and creatinin—are excreted with difficulty in parenchymatous nephritis, while *purin bodies*—uric acid, xanthin bases and ammonia—are well excreted.

N. B.—Creatinin is present in meat extracts, broths, &c.

6. Special articles of food:—

Games and eggs may be allowed with caution; strong broths, extractives and alcohol are forbidden. Coffee, tea, tobacco are irritants; spices, pepper, ginger and mustard are harmful.

Hygienic Treatment of Bright's Disease:—

The great thing to aim at is a warm equable climate.

The *desiderata* are warmth, dryness of air and equability of temperature.

To speak meteorologically, what should be sought is a high mean temperature within temperate limits, a low relative humidity and a small daily range. The writer recommends some health resorts by sea side like Puri, Waltair. Of the exercises nothing is better than walking.

NESTOR TIRARD recommends a broad flannel binder round the waist to be worn in every case.

Remember the first aphorism of Hippocrates:—

"Life is short, and the art long; the occasion fleeting, experience fallacious, and judgment difficult. The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants and externals co-operate."

* ETHYL CHLORIDE (C₂H₅Cl) AS A GENERAL ANÆSTHETIC.

BY

U. RAMA RAU,
Medical Practitioner, Madras.

GENTLEMEN,—After having administered Ethyl Chloride for about 100 cases I venture to think that I am in a way entitled to present to you a few remarks concerning the Ethyl Chloride.

* A paper read at "The Madras Medical Library and Reading room" and sent to *The Antiseptic* for publication.

PHYSICAL AND CHEMICAL PROPERTIES.

You all know very well the anæsthetic properties of Ethyl Chloride. For the benefit of junior members of the profession you will pardon me if I enumerate a few of the physical and chemical properties of Ethyl Chloride. It is prepared by passing Hydrochloric Acid into a boiling solution of Chloride of Zinc in Ethyl Alcohol in a flask with inverted condensor.

It is a colourless liquid with an ethereal odour resembling that of chloroform. Specific gravity 92 at 32°F. Boiling point at 54.5°F. It burns with a smoky green-edged flame forming gaseous Hydro-chloric Acid. When very concentrated it forms an explosive mixture with air. It is very slightly soluble in alcohol and in ether. It should contain no ether. It should not redden litmus paper if allowed to be in contact with it for ten minutes. It should have no garlic odour. It has a solvent action on vulcanite; so vulcanite mouth-piece should not be used. When we employ Ethyl Chloride it ought to be absolutely pure. A reliable but rough test is that of its smell. If allowed to evaporate on the hand, no unpleasant smell should be detected.

*Physiological action:—*Complete anæsthesia is rapidly produced when Ethyl Chloride is given and when air is carefully excluded. Mr. Lubert found that intravenous injection produced marked circulatory depression in rabbits. Dr. Mc. Cardie says, that a fall of blood pressure takes place when Ethyl Chloride is given even for a short time. When air is completely excluded, arterial tension rapidly falls and death ensues from failure of respiration and circulation. In clinical work this exclusion of air is either avoided or only practised for a short time so that the arterial pressure does not undergo any material change. Its action is very rapid. Patients lose and regain consciousness very rapidly. It is eliminated mainly through the lungs.

*Preparation of the patient:—*We are advised that food be abstained for 4 hours and the last meal should be light as in the case of chloroform with the usual preliminary purge. But my experience of 100 cases I never observed any of these. I had not even to treat after-effect of anæsthetics.

*Posture:—*It is said that any position, sitting or reclining, may be adopted, but I have in all the cases insisted the patient to be on his back. The clothing must be loose and anything interfering with breathing must be removed.

*Method of administration:—*Many methods have been suggested; but the principle is that it is administered from a closed inhaler, con-

sisting of a face-piece and India-rubber bag, excluded partially or completely from the air. Different kinds of inhalers of different makers, too numerous to mention, are recommended. None of them are available in Madras. So I have used an ordinary chloroform coneshaped mask, made of Lint, with some plug of cotton in its apex. Though this device is considered not very satisfactory it has served my purpose very well, especially so in cases of children. The advantage of this method over spraying into a bag is that the breathing of children is too feeble to evaporate the anæsthetic, and moreover, air could be very easily given when the narcosis grows deep and more Ethyl Chloride could be added when signs of consciousness appear. After making the patient lie down on the table in the recumbent posture, spray three cubic centimetres of Ethyl Chloride into the mask and then apply the mask, covering both face and nose so tightly as to prevent air getting under the rim of the mask. The patient is asked to inspire freely. If he holds his breath, as may happen with nervous patients, the chin should be sharply drawn upwards which induces inspiration. In thirty to sixty seconds from the commencement of inhalation, the breathing will become loudly and musically stertorous and the patient is completely under. He remains in this state for a minute or two. If a little more prolonged anæsthesia is needed and the patient be strong and full-blooded, another two or three c.c. of Ethyl Chloride may be sprayed in. The longest anæsthesia, I have met with, lasted for five minutes; but ordinarily it lasts for 2 or 3 minutes. In most cases I have seen eye-balls fixed and pupils dilated. I have often observed that, if the mask is withdrawn while the child is still crying and the operation is commenced, of course a short one, insensibility becomes more complete and the reflex will only return after the operation has been performed. In such cases, if we wait for the cessation of crying or is induced to give more anæsthetic to effect deeper narcosis, danger from overdose is possible. In children ocular reflexes are untrustworthy but the respiration is the surest guide. The best time to remove the mask and commence the operation is as soon as stertor appears and the respiration rapid and deep. If, after the inhalation has lasted 60 seconds, there is no stertor, more anæsthetic must be given. It is very important to remember that the narcosis, while it lasts very deep and reflexes are in abeyance and thus operations on the throat may prove dangerous or even fatal unless care is taken to direct the blood out of the mouth. Many of the anæsthetics are not in favour of the use of Chloride of Ethyl for long operations. As for the quantity, I had no occasion to use more than 3 c.c. for all of my cases except in four who were all adults and

I had to use two tubes of 3 c.c. in two and two tubes of 5 c.c. in the other two. Out of these, two were addicted to alcoholic drinks and the other two girls who would not breathe in well. It is advised not to give more than 5 c.c. for adults at one time. As a rule 3 c.c. are sufficient for children and 5 c.c. for adults. It is, however, important that the patient must be encouraged to breathe freely during the induction to ensure that the above-mentioned dose really enters the lungs. In the course of administration, if the breathing grows slower and more shallow, the chest should at once be pressed and the anæsthetic be withheld until breathing is fully restored. One peculiarity that I have been able to observe in some cases, is that when the patient is going under or just after it, there is a good deal of muscular rigidity, especially in those who are subjected to alcoholic drinks, so much so I was even afraid that the respiration would be stopped. I think it is in such cases that we ought to be very careful not to push any further dose of Ethyl Chloride.

DANGER AND DEATH-RATE.

Mr. Weir reports one death out of 11,200 cases. Mr. Seitz reports 1 in 16,000 cases. There is a good deal of difference amongst scientists as to the death-rate. Dr. W. J. Mac Cardie records 1 in 3,000, *i. e.*, less than that of chloroform. But the majority of them have accepted that Chloride of Ethyl is less safe than Nitrous-Oxide and it must be placed between Ether and Chloroform. Gentlemen, my own experience of 100 cases leads me to believe that Ethyl Chloride is safe when properly given and especially for children and for small operations as the anæsthesia obtained is just that required for rapid removal of tonsil and adenoids, the reduction of some dislocation, opening of simple abscesses or the removal of teeth, & etc. As an anæsthetic for prolonged operations it does not possess any advantages over Chloroform. I am glad to tell you that I have never seen a death nor any alarming symptoms. Experience of eminent anæsthetics is that the most common accident is respiratory failure and specially so in cases of children. Ethyl Chloride is a cardiac stimulant in small doses. But if full dose is given it dilates the peripheral arterioles. Therefore danger from the side of circulation is also recorded. Dr. W. J. Mac Cardie, B.A., M. B., B.C., (Cant.) Anæsthetist to the General, Dental, Ear and Throat Hospital, Birmingham, records from his own personal experience that there are more deaths when closed method was adopted and less mortality where admixture of air is allowed.

Advantages of the use of Ethyl Chloride:—

- (1) It is not unpleasant to inhale.

- (2) Loss of consciousness is extremely rapid.
- (3) The patient can generally leave the operating room within a few minutes of recovery.
- (4) There is no after-effect at all ; if at all very slight such as headache, Nausea, &c.

Disadvantages of the use of Ethyl Chloride :—

- (1) It cannot be used in lung diseases involving marked respiratory difficulty.
- (2) It cannot be used whenever complete muscular relaxation is required as it does not appear to relax muscles so well as Chloroform.
- (3) Smokers, suffering from Pharyngeal Catarrh, do not always take this anæsthetic well as they are liable to cough, strain and struggle for air.
- (4) Patients with weak and fatty heart.
- (5) It cannot be used for prolonged operations.

Out of 100 cases, I administered—

- 46 for removal of adenoids,
- 2 for removal of tonsils,
- 6 for opening of buboes,
- 2 for Phimosis,
- 12 for opening abscesses,
- 14 for extraction of teeth,
- 1 for cutting ingrowing nail,
- 2 for removal of small sebaceous cyst,
- 4 for scraping of small carbuncles,
- 2 for diagnostic purposes,
- 6 for cutting external piles,
- 2 for opening of rectal fistula,
- 1 for exploring liver.

100

Out of these, 40 were children under 10 years of age and the rest 60 were adults.

GENTLEMEN,

I brought up this subject for discussion this evening, not with the idea of imparting to any of you anything new or original, but with the hope of benefitting myself from the able discourses, to follow, of some of the distinguished members of our profession who are present here to-night.

Our Contemporaries.

MEDICINE.

Dyspepsia.

BY JAMES ANDREW GIBSON, M. D.

President of the Lancaster Medical Book Club.

GENTLEMEN,—I make no apology for addressing you on such a subject as dyspepsia, because, in the first place, the various disorders of digestion constitute a large percentage of the complaints for whose relief the public seek our aid ; nor do I need to add that we are, for many reasons, over some of which we have no control, not infrequently baffled in our attempts to induce the stomach to carry on its functions in a more satisfactory manner. Secondly, there have of late years, owing principally to the researches of Pawlow, been many advances made in our knowledge of what occurs in physiological digestion, and of the abnormalities in that function which we meet with.

It appears to me, then, that a paper dealing with the physiology of digestion, as now-a-days put before us, with the effects which certain drugs and articles of diet have upon the process, and with some of the ways in which digestion is disturbed, and the appropriate methods of remedy may be both interesting and useful to us all.

It is my intention to confine myself, as far as it is possible to do so, to conditions which come strictly under the head of dyspepsia and gastritis. I do not propose to touch upon any conditions of the stomach which are secondary to any general disorder or to disease elsewhere, nor shall I, if I can avoid it, be led into any particular mention of such grave gastric conditions as ulcer or cancer, while gastric surgery is quite without the scope of my subject, although many distressing and intractable cases, showing all the symptoms of an aggravated dyspepsia, can be best, and possibly only, benefited by surgical procedure.

Let me in the first place, then, recall to your memory some of the facts of physiological digestion. There is no need to do more than mention the undeniably important, though perhaps frequently overlooked, function of the teeth and the saliva. All food must be well masticated in order to render it soft and moist, and to impregnate it well with the product of the salivary glands. The power of a fresh set of teeth to cure an otherwise intractable indigestion must often have been noted by you all, while we are all only too well aware that our best efforts at relief are often nullified by the far too common habit of bolting meals without proper

mastication. As the special function of the saliva is to convert starches into soluble products, this habit of bolting has its worst results in the case of rice, oatmeal, and other cereals, which unfortunately, as they are cooked and served generally, afford special facilities for the process of chewing being neglected, the result being that one is forced sometimes to forbid such foods altogether. It is well to take note of the fact also that acids (contained in wine) and tannin tend to decrease the flow of saliva, which perhaps may explain partly the action of tea in causing dyspepsia. There is food for thought in the fact that the flow is markedly increased in diabetes.

As you are well aware, the action of the ptyalin takes place only in an alkaline medium, but goes on after the food has been swallowed for a period of twenty to thirty minutes. Although gastric secretion begins as soon as food enters the stomach, and even beforehand, each bolus of food swallowed is received into the centre of the mass already in the stomach, and is thus protected from becoming acid for a longer period than would otherwise be the case, the whole, however, eventually becoming acid. There seems, therefore, a physiological reason for the courses in an English meal, the carbohydrates usually coming on the table after the proteid courses.

Gastric secretion, I have said, begins before food even enters the mouth, the smell of appetising viands being sufficient to induce a copious flow. This proves, incidentally, that the secretion is not the result of mechanical, but of vagus nerve stimulus. This primary flow, before food enters the stomach, has been called by Pawlow "appetite juice." The importance of this lies in the opportunities given to us to promote appetite in persons of feeble digestion by paying attention to the æsthetic qualities and flavour of the food set before them, as well as by using artificial stimulants such as bitters.

"It appears to me," says Pawlow, "that * * * instinct has often made out a brilliant case when brought before the tribunal of physiology. Perhaps the old and empirical requirement that food should be eaten with interest and enjoyment is the most imperatively emphasised and strengthened of all. In every land the act of eating is connected with certain customs of designed to distract from the business of daily life. A comrades assembly is chosen; a company of relatives, acquaintances, or change of raiment is. Certain preparations are carried out (in England a the meal by the oldest usually effected, and often a blessing is asked upon special room for meal of the family). In the case of the well-to-do a is set apart; musical and other guests are invited

to while away the time at meals—in a word, everything is directed to take away the thoughts from the cares of daily life, and to concentrate them on the repast. From this point of view, it is also plain why heated discussions and serious readings are held to be unsuitable during meal times."

The composition of gastric juice varies little if at all in an individual, but the amount secreted may do so to a considerable extent. Certain foods, it appears, have the power of increasing the secretion of gastric juice, amongst them being the extractives of flesh, dextrins, milk, and water. Hence, possibly a physiological reason for the soup at the beginning of dinner. Bread, starch, white of egg are not stimulants, rather the reverse, while fat and oil have a distinct inhibitory tendency. Drugs may be used to excite the secretion of juice in cases of necessity, such as bitters and nux vomica. As students we all had it impressed upon us most emphatically that acids inhibited the secretion of gastric juice, while alkalies stimulated it. It now seems, according to Pawlow, that we must give up this long and dearly cherished notion, and repent in sackcloth and ashes for the many sins we have committed, acting upon what he has definitely and finally proved to be a fond delusion.

A few words on the movements of the stomach in digestion and I have finished this part of my address.

The food is received into an organ which, although in a state of tone, is not actively contracting. This passive state continues until all, or nearly all, of a moderate meal has been received. Then contraction begins. The large mass of food is held in a ball by the cardiac end and fundus of the stomach tonically contracted upon it, and pressing it towards the pyloric end, in which there are meanwhile waves of peristalsis occurring, causing softened food from the surface of the mass (softened by the gastric juice) to move towards the pylorus, which, being closed, turns the current back again so that the whole is intimately mixed with the juice. As digestion proceeds, the whole mass of food is eventually softened and churned, and as the pylorus opens is moved onwards into the duodenum. Why the pylorus keeps closed at first and afterwards opens freely is not quite clear to the physiologists. But the most widely accepted theory is simply that the waves of peristalsis become eventually so strong that the pylorus is unable longer to resist the pressure. Various conditions can accelerate or impede this opening. Heat, applied externally or internally, and alkalies accelerate it, while, as is well known, the presence of lumps of undigested food causes the pylorus to close up, and may even cause painful spasm, as can also the presence of an excess of acid in the stomach or in the duodenum.

Having thus rapidly sketched the physiology of gastric digestion, I now wish to draw your attention to the various ways in which it may be interfered with, the symptoms thereof, and the lines of treatment thereunto indicated.

We may take as the cardinal and important symptoms of peptic disorder, nausea, vomiting, pain, and flatulence. One or other of these, or perhaps all, of course in many cases with other symptoms, is certain to be present in all cases. And it is by a study of them, their character, association, time of occurrence, and so on, that we must try to differentiate the various abnormal conditions.

I cannot pass further without drawing attention to the brilliant results which may be obtained in many individuals presenting some of these symptoms by the administration of a few doses of "white mixture" or the judicious prescribing of a dose of calomel or other aperient, the symptoms being due merely to the auto-intoxication arising from a stagnant and loaded rectum or colon reacting adversely on a helpless stomach, itself totally innocent of offence.

Two acute forms of gastric disturbance I may pass over very shortly—those known as acute dyspepsia and acute gastritis. The former, characterised by nausea, discomfort, and feeling of malaise, without epigastric tenderness, coming on suddenly, and generally due to a surfeit or error in diet, can, as a rule, be cured in the course of a day or two by the administration, firstly, of a mild emetic, followed by a dose of castor oil or calomel and milk diet. In the second condition the symptoms are aggravated, there being generally severe pain, epigastric tenderness and vomiting, often diarrhoea, and frequently a slight pyrexia. A purgative, hot fomentations or a mustard leaf to the epigastrium; twenty-four hours abstention from food, followed by milk diet and, later on, bismuth and opium, will generally cure this condition in a week or ten days.

We now come to the consideration of those conditions which we find so commonly in our practices, and which often give us so much trouble in diagnosis and treatment, requiring all the powers of observation and all the patience of which we are capable—and sometimes more. The chronic dyspeptic is a burden to himself, a nuisance to his friends, and a source of endless worry to the physician or physicians whom he chooses to patronise; for he has little patience, and if not relieved immediately and cured in a few weeks, he is more than likely to transfer his patronage and his complaints to another doctor, and then to another and another, until eventually he falls into the hands of quacks, patent medicine vendors, diet

faddists, *et hoc genus omne*, giving no one any rest or satisfaction until he dies of some other complaint, generally at a good old age.

Putting aside the possibility of gastric or duodenal ulcer and of cancer with which conditions, except in so far as they must be carefully excluded in our diagnosis, I am not concerned at present, there are four conditions from which these chronic dyspeptics may suffer. And these we must try to differentiate. The two commonest are atonic dyspepsia and acid dyspepsia (hyperchlorhydria), which are found with about equal frequency. The other two conditions—gastralgia and chronic gastritis—are much less common.

Atonic dyspepsia is due to diminished digestive power of the stomach, probably in consequence of a deficiency of acid in the gastric juice, as the pepsin is said to be usually normal in amount. It is generally found in thin, anæmic-looking people with little of the energy of life about them, the chief causes being continued errors of diet, habitual imperfect mastication, overwork or mental anxiety, convalescence from acute diseases, while it is often one of the first symptoms of phthisis. The symptoms are pain, usually immediately or very shortly after food, which pain may not be epigastric, but in the back or shooting up to the shoulders, a common situation being just under the angle of the left scapula. There is usually no tenderness on pressure, which serves to distinguish it from gastritis, ulcer, or cancer. Eructations of wind are common; nausea and vomiting are not. The appetite varies, but is usually diminished. The tongue is flabby and indented by the teeth. There are often cardiac symptoms, such as palpitation and breathlessness while there is almost invariably an excess of urates in the urine.

It is persons suffering from this form of dyspepsia who are unable to show any appetite for or to digest simple foods, such as milk, eggs, light puddings, &c., while they will—much to our wonder and indignation at times—show an excellent appetite for, and apparently digest well and without discomfort, the most highly-spiced meats, made-up dishes, and condiments of all sorts—in short, the most indigestible forms of diet on the market. If one thinks, the explanation is simple enough. These highly-spiced foods and condiments excite a flow of gastric juice sufficient at least to cause appetite, and possibly to complete their digestion, whereas more tasteless articles have not the necessary stimulating power. This is a factor which must be kept in view in our treatment of such cases, in which, after rectifying any errors of diet—such as too frequent or too large meals, irregularity in eating, insufficient mastication, and so on—we must endeavour to stimulate both the secretory and motor power of the stomach. This we can do by

means of bitters, carminatives, and nux vomica. Acids, as one would naturally suppose, are often useful. The administration of pepsin is theoretically wrong, as there is no diminution in its secretion; and, personally, in such cases I have seldom or never obtained any good results from its use. Curiously enough, alkalies given before meals, especially if given with rhubarb and a carminative or bitter, often achieve marked success. Probably the explanation is, not that they stimulate the flow of gastric juice, but that they, especially if well diluted, help to dissolve the thick sticky mucus which is often secreted where food remains long in the stomach undigested. This is probably also the explanation of the benefit of large draughts of warm water morning and night. In these cases of atonic dyspepsia, if of long standing, there is often a great deal of flatulence and of acid eructation, which must be distinguished from the acidity of hyperchlorhydria. This acid is the product of fermentation, lactic and butyric, and can be distinguished from the hydrochloric acid of the juice itself only by chemical analysis after a test-meal.

The symptoms of an acid dyspepsia are not always easily distinguishable from those of the atonic variety, but a short enquiry into the history of the case will generally enable one to form his diagnosis. This form of dyspepsia is probably nearly as common as the former, and tends to occur more in individuals in good general health, robust and active, and generally not teetotallers, in contradistinction to the type affected by the atonic variety, who are often thin and feeble, appearing badly nourished and of poor circulation, and who are teetotallers and probably great tea-drinkers. The great and leading symptom of an acid dyspepsia is the discomfort and pain which are felt in the epigastrium—or elsewhere—not immediately or soon after a meal, but some time after, a period varying from one and a half to three or four hours—often, in fact, just before the next meal-time, and generally, as the sufferer soon discovers, more or less completely eased by the taking of food. Finding this, they naturally recognise the painful, sinking, empty sensation as that of hunger, and, as the appetite is generally very good and the digestion rather rapid than otherwise, they come to the conclusion that they are in feeble health and want supporting, and consequently increase the number and probably the size of their meals, succeeding only in making matters worse. This "hunger pain," as it is called, is very characteristic of this trouble, and varies in character and severity between a mild feeling of discomfort and emptiness and intense gnawing, griping pains, which speedily make the intervals between meals a dread, and life a misery. The pain is often experienced

during the night, the patient waking up, after a few hours' sleep, with this horrible gnawing sensation in his stomach, which he must rid himself of by means of food of some kind before he can again sleep.

The explanation of the symptoms is, I think, very correctly, and certainly very clearly, put before us in the monograph of Dr. Wm. Russell on "Gastric Hyperacidity," which appeared in the *British Medical Journal* of 18th April, 1903.

The excessive acidity of the gastric juice, while speedily digesting all the proteid part of a meal, too rapidly puts a stop to the conversion of the starchy constituents, which thereupon are left in the stomach, an acrid irritating residuum, while the fluid peptones are passed through the pylorus, which is itself now stimulated to close, by the presence of the undigested food as well as by the over-acidity of the gastric content. The acrid mass itself causes the gnawing, sinking pain, and, if the acidity is very excessive, there may also ensue an actual spasm of the pylorus, with extremely painful stomach contractions. The explanation of the relief afforded by food seems a simple one—namely, that proteid now received into the stomach promptly "soaks up" and combines with the excess of acid in the process of its digestion; but again the discomfort comes on shortly afterwards by the secretion which has been stimulated by the food taken, beyond its own needs. One can easily understand also the ready relief afforded by alkalies in this condition, they combining with the acid and neutralising it.

The treatment is mainly dietetic. One would, *a priori*, imagine that a mainly proteid diet would relieve the condition. And so it does; but only temporarily, because of the stimulating effect on gastric secretion of such a diet, so that no lasting benefit accrues. Possibly, on the other hand, if one could persist for some time in a diet consisting mainly of the less stimulating foods, such as carbohydrates, milk, and fats—neutralising meanwhile the excessive acid by means of alkalies—one might in time bring the secretion to within normal and reasonable limits. Each of these methods of treatment has authoritative support. Probably, however, the *via tuta* is here, as in so many situations, the *via media*. The patient need not, with perhaps a few exceptions, deny himself any article of diet. Of course, stimulating condiments or spiced made-dishes should not be partaken of, nor should alcoholic beverages. Proteids also should be eaten sparingly. Certain patients find that certain articles of diet are in their particular case to be avoided. One finds that green vegetables, particularly cabbage, do not suit him, probably owing to the large amount of vegetable fibre which remains undigested; another expresses himself as infinitely better now than he has given up

taking porridge to breakfast, indulging instead in the bacon and eggs of his Southron neighbours. A third is more comfortable when he denies himself the luxury of afternoon tea, with its almost purely carbohydrate accompaniments; and so on. The general rule for all to follow is to restrict not so much the quality as the quantity of food taken. Your acid dyspeptic is generally a person with a good, hearty appetite, and a full eater. Induce him to rise from each meal feeling that he would like just a little more, and I am convinced that if he only uses a little discretion in regard to certain articles which manifestly disagree with him, he will soon be living a much more comfortable life. He must also, if necessary, be provided with a good set of teeth, and slow eating and sound mastication insisted upon.

During an acute exacerbation of this malady, the sufferer is in a most distressing condition, except just after having taken food. But, with very little trouble, he can be rapidly relieved. The administration of an alkali (10 gr. soda bicarbonate) when the pain begins will immediately lessen its severity, and soon cause it to disappear. If pain come on during the night, a glass of milk may be taken up to the bedroom in readiness, and drunk at the required time with most beneficial results. Milk appears an excellent antidote for this condition, presenting, as it does, a large amount of proteid, and of fluid alkaline in its reaction, as well as a quantity of fat, which is inhibitory of gastric secretion. It should be the only diet for two or three days. The symptoms are generally some weeks in disappearing; and while they are gradually becoming less severe, that may be carefully supplemented, mainly by fats and carbohydrates rather than proteids, while a mixture containing soda bicarbonate with 5 minim doses of tincture of belladonna may be taken with advantage thrice daily, an hour or so after meals.

This condition, the "hunger pain," with the flatulence, acid eructations, and occasional vomiting which accompany it, is by some most eminent authorities held to be symptomatic—nay, pathognomonic—of duodenal ulcer. From this doctrine I must humbly dissent. For I cannot bring myself to believe that if the pain were due to a duodenal ulcer, it could be so readily and completely removed, as it often is, by the administration of an alkali, a glass of milk, or even a draught of water. Nor can we conceive of symptoms due to a lesion so gross being completely got rid of by a fortnight's careful dieting and treatment, and got rid of at any rate for months. There is by some, in distinguishing between a functional disturbance of digestion and an organic lesion of the stomach, a great point made of epigastric tenderness, as symptomatic of the latter, while never present in the former. I have, however, encountered cases

which I firmly believe to have been merely functional, and in which I have found distinct tenderness, particularly just over and below the xiphisternum.

I am not, however, prepared to say that two or three exacerbations, such as I have mentioned, following on one another would not lead one to very grave suspicion of such a lesion as an ulcer.

These two forms of chronic dyspepsia may, if neglected or improperly treated, eventuate in an atony and dilatation of the stomach, with the special symptoms and treatment of which conditions I have not time to deal.

Passing now for a short time to what is not strictly a functional disease of the stomach, we find in chronic gastritis a condition in which there is no very gross lesion, the changes in the gastric mucus membrane, even if severe, being mainly microscopic. In this disease the patient usually complains of two or three, or more, of the symptoms we usually associate with chronic dyspepsia, and, in addition, has usually epigastric tenderness, is generally thirsty, and frequently vomits quantities of mucus, sometimes streaked with blood, and this more often in the morning. Generally speaking, he is either a chronic alcoholic or the subject of cardiac or renal disease. It may be the result of frequent attacks of acute gastritis, and is not infrequently a first phase in the development of cancer. Essentially the disease is a parenchymatous inflammation of the stomach, leading through stages of congestion and mucous catarrh to eventual destruction of the secretory glands and fibrous atrophy of the whole lining membrane. This being so, one can readily imagine that as the disease progresses there is, with a large outpouring of mucus, a gradual diminution and eventual complete cessation of the secretion of hydrochloric acid and pepsin.

The treatment again is mainly dietetic, and would little suit the taste of most of us. Food should be given in small quantities, dry, and at long intervals, while complete abstinence from alcohol and tobacco should be enforced. Medicinal treatment in the early stages should be directed towards promoting the flow of gastric juice and stimulating the stomach by bitters, nux vomica, and carminatives; while pain, flatulence, loss of appetite, or too keen appetite (which is sometimes present) may be treated symptomatically.

Later in the disease the indications are to replace the absent digestive juices by the administration of pepsin, hydrochloric acid, and pre-digested foods. Perhaps I may express my own humble opinion as to the uselessness of pepsin preparations in all other forms of dyspepsia except this. In no other form is the gastric juice absent, or requiring

more than stimulating. In acute dyspepsia all that is necessary is abstention from food, giving the stomach rest, for a short period. In atonic dyspepsia the glands are there, and pepsin is secreted, the only abnormality being the deficiency of hydrochloric acid. Surely extraneous pepsin is not likely to benefit this. It appears to me wrong in principle, tending more to leading the stomach to expect this help—if help it is—and to neglect its own work more and more, than to stimulating it to make an effort to reassume its responsibilities. There may be some advantage, certainly, in giving to a person who is recovering from severe illness or fever, and whose digestive power is weak, and whose secretion of pepsin is quite likely feeble—there may be advantage in giving to him a little pepsin occasionally, or foods partly or wholly predigested, but for as short a time as possible. In the late stages of chronic gastritis the usefulness of pepsin, nay, its necessity, is apparent. In other dyspepsias I can only say that I have never obtained from its use any real benefit whatever.

A word on gastralgia, and I have finished. And this word more in the way of warning not to be content with the diagnosis of gastralgia until all other more definite forms of gastric trouble have been excluded. Gastralgia, like neurasthenia and influenza, is often the happy refuge for the careless and the ignorant. But there is a true gastralgia—paroxysms of gastric pain having no relation whatever to the time of taking food, nor the quantity nor the kind eaten. Generally it occurs in neurotic people who have been the subjects of neuralgia elsewhere. Differential diagnosis I cannot enter into. Treatment must be directed to the general condition; while for the pain, which is the leading and often the only symptom, bromides, antipyrin, silver nitrate, and arsenic are probably the most useful drugs. Morphia, as in all neurotics, must be used cautiously.—*The Caledonian Medical Journal*.

“Rat-Bite Fever.”

T. J. HORDER, F.R.C.P.

A man, aged 62, was bitten by a rat on the right thumb on Jan. 1, 1909. The bite did not bleed much. The bite looked “unhealthy” for several days and the thumb was slightly swollen and painful. Eventually the bite healed completely. On Jan. 22 there was renewed activity at the site of the bite. The thumb became much swollen and indurated on its dorsal surface and intense lymphangitis occurred, affecting the whole arm. There was a temperature of 100.1° and slight malaise, and in a few days the patient seemed well. On the 29th he became much more ill with a temperature of 104°, sore throat,

husky voice and delirium. The swelling in the arm again increased and there appeared erythema-like swellings in other parts. The local symptoms were not so severe as in the first attack.

He was admitted to hospital on Feb. 2. He looked healthy. There was a cicatrised dry scar on the right thumb. In the centre of the forearm was an elongated, red, slightly indurated and tender patch, apparently lymphatic in distribution. There was some redness and tenderness along the inner border of the biceps. The axillary glands were not tender or enlarged. On the forehead were 3 small circular red patches indurated with ill defined margins, a hard, tender, reddish-yellow thickening over the right inner canthus, and 2 or 3 red and indurated patches on the legs. The temperature was 100.2°; the urine contained a trace of albumin; the leucocytes were 18,000. There were no signs of disease of the internal organs.

On the 2 following days the temperature fell to normal, but it rose again to 103.5° on the fourth and fifth days, gradually falling to normal on the seventh day to rise again on the ninth and tenth. Counting the rise before admission 5 of these pyrexial waves occurred during 25 days' stay in hospital. A week after admission the patches of red induration became pale and soft and then disappeared. In the next bout of fever they recurred and were best marked on the backs of the hands, and diffuse, ill-defined tender swelling appeared about the same time in the substance of the right hamstring, lasted 3 days, and disappeared. About the same time a similar lump appeared at the right side of the neck. During the pyrexial bouts there were anorexia, torpor, and sore throat, and the leucocyte counts were always raised to 18,000, falling with the temperature to 7,900-10,000. Blood cultures were negative.

At first the writer suspected septicaemia due to some pyogenic infection during or soon after the bite. Examination of the blood and nodules for microbes was negative. The writer then heard of two other similar cases. On the basis of the 3 cases he gives the following description of a disease which he terms “Rat-Bite Fever,” which has not previously been described in England:—

All the cases presented the following points in common. A bite from a rat is sustained which may or may not suppurate. After an incubation period, in 2 cases of 28 days and in the other case of a few days less, lymphangitis of the tissues about the bite with malaise, anorexia and fever supervene. At the same time erythematous indurated patches appear, irregularly distributed over the skin, and diffuse tender swellings in the muscles. The attack may last from a few

days to a week. A series of similar attacks follow at regular intervals sometimes for several months. The intervals vary from 3 to 10 days. Blood examination for microbes was negative but leucocytosis was present during the fever. Spontaneous recovery ensues and no treatment has proved of value. The writer suggests that the infective agent is a protozoon.

G. H. Weaver, Sec. of the Chicago Path. Soc. (*Four. American Med. Assoc.*, Feb. 12, p. 151) points out in connexion with Dr. Horder's paper that previously, in 1903, Dr. W. A. Evans read a paper entitled "A Fever Following Rat-Bite," before the Chicago Path. Soc. (*Transact.*, Vol. v., No. 14). He reported 3 cases which he had seen, and he had collected 55 cases from the literature, 15 of which were reported in America, 1 in France, 1 in Spain, and 38 in Japan. The earliest report in America was made by Wilcox in 1893. The other cases have followed at considerable intervals. The striking features of the disease have been well described by Evans as follows:—

"The wound heals promptly. After a varying interval—usually 10 to 21 days—the fever appears. It is attended by pain, swelling, and usually some discolouration at the point of the bite. There is usually some chilliness, a moderate degree of general neurægia, and sweating is rather noticeable. The marked peculiarity of the fever is its disposition to intermit. The intermissions may last for days, weeks, or possibly a month or more. During the intermission the patient feels well, and children frequently return to school. Local glandular enlargement is marked, and a general adenopathy may be present. The glandular enlargement usually increases and decreases with the fever. The enlargement may come on with the onset of the fever; sometimes it is delayed for weeks.

"The exanthematous or urticarial eruption is very striking. It may occur with the onset of the symptoms, but this is the exception. The rule is for the eruption to appear several weeks after the onset of symptoms. The eruption is reddish or purplish, with a red corona. It may be quite diffused. It is usually more pronounced in the vicinity of the bite than elsewhere. It fades as the temperature goes down, but it does not disappear entirely. It usually persists after all the symptoms have disappeared."—*The Medical Review.*

Clinical Forms of Arterio-Sclerosis.

PROFESSOR HUCHARD, of the Faculty of Medicine of Paris, discusses this subject in an article in the *Medical Press and Circular*. He has carefully investigated 1980 cases with the following results:—The most frequent etiological factor was gout and its manifestations, gravel

lithiasis, 393 cases; rheumatism, 254 cases; syphilis 237 cases, alimentary habits, 205 cases; and tobacco, 188 cases: 57 cases followed infective diseases; diabetes, 51 cases; alcoholism, 31 cases; malaria, 23 cases; and the menopause, 21 cases. Moral and nervous causes only accounted for 19 cases. These statistics show that tobacco, syphilis and alimentary habits cannot be discarded from the etiology of arterio-sclerosis, as certain authorities would have us do. The present confusion on the subject of arterio-sclerosis is specially due to authors not having sufficiently defined the limits of the disease which they seek to describe on the strength of its anatomical character rather than by its clinical characters. From the clinical aspect three principal forms of arterio-sclerosis can be recognised—cardio-renal, the most frequent; cardio-sclerosis of myo-valvular origin; and sclerosis of the cardio-bulbar type (Stokes-Adams' disease). Four stages can be recognised in its clinical source:—A first stage characterised by heightened arterial tension of toxic origin (pre-sclerosis); a second, cardio-arterial, stage with cardiac degeneration; a third, mitro-arterial, and a final stage, which may be wanting, characterised by disturbance due to cardiectasis. The dominant symptom during the pre-sclerosis stage is hypertension, presumably of renal origin; this prepares the way for, and causes the vascular lesions of arterio-sclerosis. At this stage the arterial lesions are reduced to a minimum and the disease is perfectly curable. The painful symptoms comprise angina pectoris, rheumatoid pains in the limbs, intercostal pain, the arterio-spasmodic origin of which is shown by the success of the vaso-dilatation treatment inaugurated by Weber and Jaquet. Towards the end of the first stage cardio-sclerosis is accompanied by tachycardia and arrhythmia. This tachy-arrhythmia is soon accompanied by a *bruit de galop*, which is not easy to distinguish in consequence of the rapidity of the heart beat. Then, too, there is alimentary toxi-dyspnoea, which must not be mistaken for uræmia. The latter does not disappear rapidly, as does the dyspnoea of cardio-sclerosis patients on a suitable diet. In the myo-valvular form, in addition to the arterial lesions, we get lesions of the aortic or mitral valves. Clinically this manifests itself by the same toxic phenomena. The mitral lesion may lead to a narrowing or insufficiency of the auriculo-ventricular orifice. In order to distinguish the physical signs of mitral stenosis, it is necessary to lower the aortic tension by rest, diet and hypotensive medication, and to slow the heart by giving digitalis. We can then detect reduplication of the second sound, attenuated and intermittent, presystolic *roulement* and diastolic snoring, as in all arterial cardiopathies. Mitral stenosis in the subjects of arterio-sclerosis is

accompanied by symptoms which are not met with in pure mitral stenosis, they being consequent on the extension of the arterio-sclerosis to various organs and tissues. In aortic stenose and insufficiency it is not the aortitis which does the harm in aortic insufficiency in the subject of arterio-sclerosis, but the kidney, which by the imperfect discharge of its functions, favours the production of toxic disturbances. The disease is in the heart, but the danger is in the arteries, and especially in the kidneys. Arterio-sclerosis may be of aortic origin, as syphilitic arterio-sclerosis, and it may remain for some time apparently a merely local disease, which, however, in the course of months or years is followed by the usual symptoms of arterial cardiopathy. The sinuosity and hardness of the temporal artery is not necessarily a sign of arterio-sclerosis, since this state of the artery may be met with in pure hypertension without any vascular lesion, or it may be due to atheroma without concomitant arterio-sclerosis. Cerebral hæmorrhage has been put forward as a consequence of arterio-sclerosis, but it only occurs when the disease is complicated by interstitial nephritis. We must also distinguish between the senile heart and the arterio-sclerous heart, for the proliferation of connective tissue that takes place in the cardiovascular system of the aged presents many points of difference from that of arterio-sclerosis. With regard to treatment during the pre-sclerosis stage, we must deal with the intoxication of renal origin and the hypertension, the former by milk or lacto-vegetarian diet, and the administration of diuretics, theobromin and thyminic acid; the latter by massage, muscular gymnastics, carbo-gaseous baths and vaso-dilators. In the second stage milk diet is *de rigueur*, or we must, at any rate, reduce the introduction of alimentary toxins to a minimum. In the mitro-arterial stage, milk diet must be enforced with the administration of theobromin and digitalis, diminishing the amount of liquids.—*The Australasian Medical Gazette*.

The Medical Treatment of Whooping Cough.

A PLAN for the local and internal treatment of whooping cough, originally recommended in Ander's "System of Medicine," has been very favourably reported on by Dr. McEvitt. The usual hygienic rules are observed very carefully, and the drug treatment is as follows:—The throat and nose are sprayed regularly with a mixture of equal parts of peroxide of hydrogen and glycerine. If there is any nasal discharge an ointment is applied to the nares every two hours, containing menthol, boric acid, and white vaseline. The tasteless tannate of quinine is given also in small doses; in solution to infants, and in chocolate tablets to children of four years and upwards. These are all ordered for their antiseptic

effects. In addition, emulsion of asafoetida (U. S. P.) is given as an anti-spasmodic. This stimulating and anti-spasmodic expectorant is also carminative in action, so much so that it must be administered very carefully or else it will upset the stomach. For an infant under five months the author prescribes four or five drops every two hours, and increases gradually to eight or ten drops. At four years he begins with fifteen and increases to thirty drops. Notwithstanding the objectionable odour of the drug, Dr. McEvitt is convinced that its value counterbalances this disadvantage. Vomiting has very seldom been troublesome in the cases thus treated, and hence diet problems have been easily solved.—*The Hospital*.

Two Unusual Cases of Chronic Retention of Urine.

IN a paper read before the Berlin Medical Society, and published in the *Berliner Klinische Wochenschrift* of March 7th, Professor L. Casper of Berlin described two interesting and unusual cases of chronic retention of urine. The first patient was a man, aged 68 years, who was seen by Professor Casper eight years ago with retention; since this time he had not been able to pass urine except by catheter. Examination showed that no mechanical obstruction was present and that the prostate was small rather than large. There was no indication of cerebral disease or of tabes. There was no history of syphilis, and no other symptom of disease, the patient being able to attend to his business. Professor Casper therefore regards the case as one of "senile bladder" (*Altersblase*), developing relatively sooner than usual, the pathological basis of the affection being a degeneration of the bladder muscle associated with a connective tissue sclerosis, like that described by Guyon and Lannois in 1885. The second case was more obscure, and the manner in which Professor Casper arrived at his diagnosis is both interesting and instructive. The patient was a man, aged 34 years, who for the past six years had not been able to empty his bladder except by catheter. As in the previous case, there was no evidence of mechanical obstruction, of nerve disease, or of syphilis. The age of the patient excluded the diagnosis of senile bladder, and the actual nature of the case remained obscure until Professor Casper showed the patient to his colleague Dr. Th. Mayer on account of a peculiar condition of the skin over both knees and hands. This was recognised as an atrophic condition of the skin, and was found to be associated with some atrophy of the interossei and lumbricales of both hands. These atrophic processes led Professor Casper to attribute the inefficiency of the bladder to a similar condition of its musculature, and cystoscopic examination lent support to this view, since a number of

diverticula were found to be present. Apart from congenital diverticula, such appearances are only found in cases where the pressure of the urine causes the bladder wall to yield, and their occurrence in a young man without mechanical obstruction of the urinary passages led to the conclusion that the bladder wall was partly atrophic and had therefore yielded to the ordinary pressure. The case was, therefore, regarded as a tropho-neurotic affection with atrophy of various structures. This diagnosis excluded the use of operative measures for treatment, which therefore consisted simply of catheterism. It will be interesting to see if Professor Casper's communication serves to bring forward records of similar cases.—*The Lancet*.

How Plague is Spread in India

At a recent meeting of the Viceroy's Legislative Council a discussion arose on the prevalence of plague, and the reason why the disease chiefly attacks natives whilst Europeans escape. Some of the native members of the Council expressed the opinion that from the ravages of plague the native population suffered so terribly owing to the failure of the Government to carry out effective sanitary measures. Surgeon-General C. P. Lukis, Director-General of the Indian Medical Service, spoke very strongly in vindication of the Government, and, in reply to the complaints of the native representatives' remarks, said: "If there is one thing we have learnt in the last thirteen years it is that plague has nothing whatever to do with pollution of the soil, contamination of water-supply, or defective drainage, and large sums of money have been spent by Government without any effect as regards the checking of the disease. Recent discoveries have proved that plague is essentially a disease of rats, and that the medium of communication between rat and man is the rat flea. What happens when plague breaks out amongst human beings is this. First of all the rats are attacked. So soon as this happens they begin to run away from the infected house, but in so doing they leave their nests behind them and in these nests a large number of rat fleas. Now, ordinarily the rat flea will not bite human beings, but when no rats are forthcoming they are forced to do so, and thus they convey the infection to the inhabitants of the house and a plague epidemic is started. It is obvious, therefore, that the question of the prevention of plague becomes one of domestic hygiene. What is wanted is to teach the Indian public the danger of allowing the rat to remain a domestic animal, and to advise them to try and prevent this by giving up the habit of storing grain in the house, throwing remnants of food about in its vicinity, and by allowing collections of rubbish behind

which rats can make their nests. So long as the rat remains a house-dweller, so long will the danger of plague continue; and until this fact is appreciated it is useless for Government to squander large sums of money on sanitary improvements of doubtful value. I wish, however, to state distinctly that I must not be understood as deprecating sanitary improvements on general lines. I merely wish to point out that, as regards this particular disease of plague, it is the habit of the people and not the want of care on the part of Government which is largely responsible for the persistence of the epidemic." There is, no doubt, much truth in what Surgeon-General Lukis says, but we feel sure that there is something to be said equally convincing on the other side.—*The Medical Times*.

SURGERY.

A Simple and Efficient Operation for Hemorrhoids.

N. PARRIT. *Lancet*, February 5, 1910.—The sphincter having been stretched one of the hemorrhoidal masses was seized with vulsellum forceps and pulled well out of the anus. It was encircled with a loose purse-string suture of fine Pagenstecher's thread. Above the purse-string suture entered the healthy rectal mucous membrane beyond the hemorrhoids; below it took up that just within the anus; whilst at each side it was inserted far enough apart to allow the blades of the crushing instrument to grasp the base of pedicle of the pile seized. It is essential that the pile be pulled well down. As soon as the purse-string suture is placed the base of the pile is crushed. Parritt used a Corner's appendicectomy clamp, but a pair of hemostatic forceps with blades long enough to overlap the base of the pile would be suitable. When the clamp is released a broad flat layer of crushed tissue connects the pile with the rectum. The pedicle is now folded once upon itself by giving a half-turn to the pile, the clamp is re-applied, and the crushing is repeated. When the clamp is removed something like a pedicle has been made, but another half-turn, followed by another crushing, leaves nothing more than a fine pedicle of crushed tissue. This is tied with a fine ligature beyond the clamp, and the clamp is finally removed. The pile is then snipped away through the crushed pedicle. The stump of crushed tissue with the ligature upon it is then buried by drawing tight and tying the purse-string suture already inserted. Other portions of the mass are isolated and removed in the same way.—*American Journal of Surgery*.

Furuncles Treated by Bier's Method.

BIER'S method of hyperæmic congestion for all manner of local inflammatory conditions has been so much reported upon and discussed of late that its possibilities, as well as its limitations, are now well recognised by the profession. The treatment of furuncles of the face by this method would appear, however, to offer special difficulties, and a report on a number of cases so treated by Dr. W. Keppler, assistant of Dr. Bier, is not without interest. His report deals with 12 severe cases of furuncles of the upper lip, and 24 cases of a more mild nature, in which the lower lip and other parts of the face were affected. All the cases were cured by the treatment in the course of four to six days. The technique of the treatment is as follows: an elastic band, three centimetres wide, is applied around the neck as low as possible and fixed at the back by a hook and eye. It need only be drawn moderately tight, as stasis is easily produced in the neck with only a moderate amount of constriction. A compress may be placed within the band. The band should be kept on for 20 to 24 hours. The inconvenience experienced soon passes off. The face becomes swollen, and especially the affected parts. At the end of one to three days of hyperæmia the inflamed area softens and suppurates freely, then the discharge diminishes, and is followed by the process of healing. Applications should be made each day the duration being gradually reduced, till the inflammatory process is at an end and repair of the tissues commences.—*The Hospital*.

Quinine in Syphilis.

Dr. H. C. French, of the Royal Army Medical Corps, writes on the use of quinine in syphilis. During his sixteen years' specialized work on venereal diseases in the army, he has extensively "substituted" quinine for mercury whenever there is an associated malarial history, or if syphilitic fever is present. His attention was directed to this drug in India, where cases of syphilitic fever were not infrequently sent into hospital as ague, or *vice versa* or the two diseases co-existed. The drug acts most beneficially in any "septicæmic" state with fever, whether such be due to gonorrhœa, syphilis, or enteric fever. As early syphilis is associated with a loss in numbers of the red blood corpuscles and in the amount of the hemoglobin in those cells, quite possibly the action of the drug may be in overcoming this degenerative process, and thus assisting the blood to deal with the inroads of the virus in the early and more remedial phases of the disease, by increasing its phagocytic power, or by the formation of antibodies. Further, any drug which tends to reduce the number of spirochetes in the blood in the early stages, will consequently lessen the

amount of toxin which can later injure the central nervous system and cord.—*Medical Review of Reviews*.

Notes on Elephantiasis and a Case Treated by Lymphangioplasty.

BY

ARTHUR F. COLE, M.R.C.S., L.R.C.P., NINGPO.

Those of us who work amongst Chinese will bear me out when I state that the general feeling among our patients is that elephantiasis, as evidenced by immense limbs (and occasionally other parts), is an incurable disease; it is true that sometimes we are able to help them by lopping off an unwieldy member, but after all this cannot be considered good surgery. Many of us are practically of the same opinion when confronted with these cases daily, and Chinese quacks and foreign surgeons seem alike ignorant of a cure. It is reasonable first to enquire whether there are any prophylactic measures possible by which the occurrence of tropical elephantiasis might be made rare. And to do this intelligently one must consider the facts as regards its ætiology and pathology. As far as I have met it, elephantiasis in one's practice in Ningpo seems to be almost wholly limited to the men who work daily in the rice fields up to the ankles or deeper in water; the only other part of their anatomy, which comes in direct contact with the water, are the hands, engaged first in dibbing the individual rice plants into the mud and later on in keeping the surface weeds from prejudicing their health; it is important to note the fact that the hands are in far more active motion than the legs, and so would be less likely to become attacked by disease-provoking agents in the water, but the opportunities for inoculation in the legs are continuous if the source of infection resides in the paddy fields. It is a well-known fact that the higher in altitude a village lies the smaller the number of cases of this disease; the fact that some hillmen regularly descend to the plains for agricultural purposes might account for even this small number. Almost every case met is in one or other leg, or both, and seldom elsewhere; the proportion of those affected varies greatly, but in some districts it is no uncommon experience to meet a file of men coming from market with every fourth or fifth carrying an extra load in the form of an elephantoid leg.

In women one rarely but occasionally meets the disease, and yet the largest leg but one, met in nearly five years, belonged to a Christian woman, to whom, when in difficult labour, I was called professionally.

The only other case I have seen was a bilateral hypertrophy of labia majora, presumably, from its appearance on section, elephantoid.

Whether the comparative rarity of the disease in women is apparent or real only careful enquiries will show, but the fact that but two cases have been met in several years of Chinese practice, makes it probably a real rarity. If this be so, it is pertinent to ask whether, first, the comparatively small disease incidence in women is caused by the fact that they seldom in this region work in the paddy fields, or secondly, the theory usually advanced is correct, which conceives the filaria conveying culex deliberately choosing males for inoculation and almost invariably selecting the lower limbs with all the possibilities of a semi-naked body before it; it is true that women usually wear more garments than the men, but almost always the voluminous trousers of the female allow of an easy access to the lower part of the leg, and the arms and hands are even more often bitten; again, the number of foreigners who have worked in these regions and who have not incurred the disease, is not small, and no one escapes being bitten, even when fully clothed.

In this region leech-bites are very common as a consequence of working in the fields, and, in one case I met, an attack of elephantoid fever followed hard on a single leech-bite. In this man an intense lymphangitis commenced at the leech-bite, and the temperature was more or less continuously 103° - 104° for 10 days with enlargement of femoral glands and thickening of the skin over that region. I was given the rare opportunity of excising a portion of the pachydermatous tissue during the acute stage and investigating it microscopically; nothing in the form of micro-filaria, aborted ova, or parent worms was found; only a round-celled infiltration, together with an excess of fibrous tissue; the latter perhaps the relic of a former attack, the former highly suggestive of the presence of micro-organisms or of their toxins; it is just possible that other methods of staining might have demonstrated the real nature of the causal agent.

Such attacks are very commonly met and are not considered as serious, often lasting not more than a week; the local term is "flowing fire." The accompanying oedema gradually passes away, but each subsequent invasion leaves the limb in a condition less able to return to the normal.

If filariasis were the sole cause of elephantiasis, directly or indirectly, it is remarkable that dogs and other animals escape so completely, filaria immitis being so common and the dog being by no means immune from injuries from blows, which have been called in to account for lymphatic obstruction due to ova prematurely discharged by the parent worm.

To put it more concisely the following reasons seem to be against filaria bancrofti being the sole cause of elephantiasis as met in this part of China, and more especially if mosquito-borne.

(1) Elephantiasis is extremely common, especially in the level country, whilst filariasis is apparently rare. At a meeting of 16 American and English doctors at Mohkashan, when this paper was read, only one had demonstrated filaria nocturna; out of 50 cases examined at night by Dr. Beatty in Hangchow hospital, without selection, 3 of whom were cases of elephantoid fever, not one was found to contain micro-filaria. Out of 120 men examined without selection in Ningpo hospital, only one contained filaria at night; he came from Southern Taichow.

(2) The sex generally affected is the male, out of all proportion if the only method of infection with filarial embryo (supposing this to be the cause of elephantiasis) were through culex fatigans and certain other mosquitos, as has been proved to take place, one would expect an equal ex-incidence of elephantiasis.

(3) The part usually affected is the leg, if the bites of mosquitos, etc., were the means of infection, the arms and other exposed parts would be just as likely to be affected by elephantiasis, and that in both sexes.

(4) The class affected is the country labourer in the rice fields. It is extremely difficult to differentiate the mankind in any village where the disease is endemic, for every male seems to be a practical farmer by instinct and most have been in the fields at some period of their lives but it would seem to be a wellfounded impression that those who are engaged in literary or commercial pursuits are exempt to a greater degree. If the disease were solely mosquito borne dwellers in cities and country should show a more equal proportion of elephantiasis case and for culex fatigans and stegomyia tasciata are common in city and country and are no respecters of persons.

(5) If filaria immitis and probably others affecting dogs and animals generally can be considered analogous to filarial bancrofti in man, one might expect occasionally to see like elephantoid effects in the limbs of the more aged animals thus affected.

(6) In the vast majority of cases of filarial infection there is no disease produced; the host is "tolerant" of the parasite (Lankester); if this be a fact how can we account for the large number of cases of elephantiasis and the small number of individuals of all ages, in whose blood filaria have been demonstrated? Possibly it is because we have failed to take advantage of the opportunities for research which have been given us. And we lay ourselves open to blame if we individually

contribute no facts from our experiences which will help subsequent observers in investigations.

So that with regard to prophylaxis we must remember that Chinese agriculturists are the class most affected, and as Chinese food, *i.e.*, rice, and Chinese prejudices are factors which are not likely to alter, we can only make the suggestion that all those who work under the conditions detailed should wear stockings roughly waterproofed according to native methods, using strong coarse material which could be repaired or re-proofed at home; the cost and trouble represented by even this simple means would cause it to be neglected by the vast majority of Chinese, who would deliberately choose the chance of elephantiasis when confronted with an additional expense. One other suggestion: all sores and ulcers should be treated early; it is possible that some day we shall find that a proportion of the numerous ulcers of the legs belongs to the class of "infective granulomata" and are intimately connected with elephantiasis; such ulcers, if treated in the early stages, might abort later developments; it is interesting to note that some observers have actually isolated a diplococcus and hold it responsible for the after-effects, presumably by causing an obliterative lymphangitis. Of the 120 cases of men examined at night in C. M. S. hospital, Ningpo, no less than 24 had elephantiasis fever, and only one had filariasis.

In the above remarks I have not touched upon the group of what Manson calls elephantoid diseases, chyluria, lymph scrotum, chylocele, etc., but this is because I have not met a case as yet; it certainly occurs, but is in the long experience of a Shanghai physician far more common amongst his Sikh and Parsee patients than amongst his far more numerous Chinese patients. It is chiefly to stimulate myself and those of us engaged in Chinese practice to a greater keenness in observation, clinical and microscopical, that the foregoing remarks have been made. What each of us should aim at is the truth. Each one of us, however busy, can contribute facts from his or her sphere of work which would make many of our present doubts into certainties; at the same time some of our generally accepted certainties would become more doubtful. Theories are most useful things, and we must be thankful to Sir Patrick Manson for his filarial-moquito-borne-lymphatic-obstructional one, but from the few imperfectly ascertained and feebly expressed facts I have mentioned the possibility of other causes of lymphatic obstruction must be allowed in these cases; moreover, there seems to me evidence to show that the filaria nocturna and culex fatigans (with certain others) in this part of China are not always the guilty couple; also that micro-organisms, suitably

inoculated, could certainly cause first an acute and subsequently a chronic obliterative lymphangitis, as a result of which true tropical elephantiasis could be set up.

The second part of my paper leaves theories, and is intended to bring to your notice a case of elephantiasis of the leg in which I performed the operation termed lymphangioplasty by its originator, W. Sampson Handley, of Middlesex Hospital, London.

Photographs show the extraordinary improvement which took place in the limb and also suggest that in some way or other the general health of the patient improved, but this may be merely the result of regular meals and attention. The man was married, aged 35, and had been engaged in agricultural pursuits; he gave assent to the experiment; it being explained that a cure could not be guaranteed, as it was the first case attempted by me.

His leg was moderately enlarged by elephantiasis, not extending above the knee. History of many years' gradual enlargement with successive exacerbations of lymphangitis; no filaria were found in his peripheral blood; there were two deep unhealthy looking ulcers on the foot, of the kind which I find extreme difficulty in curing in out-patient practice when complicating elephantoid legs; the larger ulcer, not visible in the photo, measures some 3.5 x 1.5 inches, pale and weakly granulations lay at the bottom of a deep crater with thickened margins.

For three days prior to operation the leg was washed with soap and water and compresses of very weak antiseptics applied continuously; the patient was kept in bed as far as possible. The day previous to operation the skin from well above the knee to just above the ankle was painted with tincture of iodine and again just before operation.

Six pieces of plaited silk, ordinarily used for ligaturing large vessels, had been boiled twice and allowed to cool in the interval; they were about 16 inches in length, and we devoutly hoped sterile.

With a scalpel small vertical half inch incisions were made at the level of greatest calf diameter, with intervals of about two inches, chiefly on the anterior and peroneal aspects of the limb; using these incisions a long combined needle and holder was made to enter the subcutaneous tissue, guided by the finger externally. With the exercise of a varying amount of force it was finally made to emerge by piercing the skin just above the ankle, avoiding the horny masses of elephant-like hide seen in the photograph; it was in this position threaded with the silk and made to retrace its path; thus the silk was embedded from the ankle to the lower part of the incision, except that the needle was first threaded and then made to traverse the subcutaneous tissue upwards, where it pierced the skin well above the knee, the procedure was the same in the

upper portion ; at the upper puncture the silk was seized and cut, the blunt needle withdrawn ; projecting portions of the silks were cut away and the small incisions closed with silkworm gut. In this way were embedded some six fairly thick strands of plaited silk, each about fourteen inches in length, extending from the ankle to the healthy tissues above the knee. The silk threads were made to follow the general direction of the normal lymphatics, *viz.*, from without inwards towards the popliteal region. Boiled absorbent non-medicated gauze dressings were applied and the limb firmly bandaged and slightly elevated.

It was not disturbed for six days, and long before that time the loosely hanging bandages and normal temperature with total absence of pain showed us that the new lymphatic channels were doing their work well, and not only so, but the ulcers on being examined showed clearly by the rapid change in colour and the diminution in size of the ulceration that the diminished pressure of lymph was an important factor in healing ; as a matter of fact the ulcers were quite healed within the fortnight without any drugs or ointments.

All stitches were removed on the sixth day, and the leg, which before operation was 19 inches at the calf, was now 16½ inches, and on the 12th day 15½ inches, as compared with the normal calf, which measured 14 inches.

Patient and doctors were alike pleased, and a good deal of incredulity which had existed in the minds of my own native assistants was now replaced by the feeling that a cure had been found ; a rude shock was experienced when, after a good deal of walking, the end of the first day after three weeks in bed saw a great enlargement of the "cured" leg.

By the aid of massage and firm bandaging and a more gradual return to more ordinary locomotion this was remedied ; when last seen the patient wore a happy and contented expression and was rejoicing in a fairly normal limb, though the thickening near the ankle was still present.

Whether this will last or not remains to be seen ; the introducer of the method suggests at least ten years, based upon theories as to the length of time that the silk will remain unabsorbed, but this may be far longer and may be far shorter ; time will show.—*The China Medical Journal*.

A New Operation for Hæmorrhoids.

An operation for the removal of hæmorrhoids based upon the principle of crushing the base and burying the stump as carried out in appendectomy has been devised by Dr. N. PORRITT.

The sphincter is stretched and one of the hemorrhoidal masses seized with volsellum forceps and pulled well out of the anus and is encircled with a loose purse-string suture. Above the purse-string suture enters the healthy rectal mucous membrane beyond the hemorrhoids ; below it takes up the membrane just within the anus ; whilst at each side it is inserted far enough apart to allow the blades of the crushing instrument to grasp the base or pedicle of the pile seized. It is essential that the pile be pulled well down. As soon as the purse-string suture is placed the base of the pile is crushed. When the clamp is released a broad flat layer of crushed tissue connects the pile with the rectum. The pedicle is now folded once upon itself by giving a half-turn to the pile, the clamp is re-applied, and the crushing is repeated. When the clamp is removed something like a pedicle has been made, but another half-turn, followed by another crushing, leaves nothing more than a fine pedicle of crushed tissue. This is tied with a fine ligature beyond the clamp, and the clamp is finally removed. The pile is snipped away through the crushed pedicle. The stump of crushed tissue with the ligature upon it is then buried by drawing tight and tying the purse-string suture already inserted.—*Medical Review of Reviews*.

Report of Case of a Rupture of the Membrana Tympani While Using a Telephone.

The patient was a stenographer, thirty five years old, who gave the following history : While responding to a telephone call, on placing the receiver close to the left ear, she felt a popping sensation, followed by pain and tinnitus. She also noticed impairment of hearing in this ear. Examination revealed some dried blood in the canal and on the membrane at the site of rupture. There was a tear in the posterior inferior quadrant. Pain had ceased one hour after the injury was received. By inflation of the ear and appropriate treatment, normal hearing resulted in six weeks.—*American Journal of Surgery*.

The Prognosis in Operations for Appendicitis.

BY

MAURICE SAVARIAUD, M.D., OF PARIS.

Surgeon to the Hospital of Paris.

The prognosis in operations for appendicitis varies according to the time when the operation is performed—namely, whether it is an interval one or one occurring during a crisis of the disease. In the operation generally known as the interval one the mortality is light.

Now the important matter to remember is to differentiate, with the utmost care, between cases in which the appendix is free from adhesions, and the cases in which it is so closely united to the surrounding parts that the surgeon is compelled to dissect it away from the adhesions. In the former we have a slowly developed appendicitis of the mucosa variety, since the inflammatory processes have not passed beyond the appendicular mucosa. The mild crises which evidence the disease are characterized by pain at McBurney's point; and when these are synchronous with an enterocolitis the diagnosis is attended with some difficulty, due to the fact that it is far from easy to distinguish between them and an inflammatory condition of the colon. Of course it is not difficult to recognize the presence of an enterocolitis when there is diffuse pain along the large intestine; when in the faeces there is mucus more or less discolored by blood; but though all this be granted, can one say with justice that in the intestinal disturbance the appendix played absolutely no part? If the difference between appendicitis and enterocolitis were as distinct as is claimed by DIEULAFOY, the question could be easily disposed of; but with our knowledge of the fact that enteritis does not preclude the presence of appendicitis, and, furthermore, on account of the absence of a surgeon during an attack of enteritis probably accompanied by an appendicular crisis, it is most difficult to say whether or not the appendix was affected. Under these circumstances, should the surgeon wait for a second attack that would be more authentic than the first? Since the removal of the appendix in these circumstances is without danger, it were well to advocate the operation at once, for by so doing a preventive measure against future accidents is effected.

Perforation of the appendix is of such gravity, and the removal of this organ, when there are no adhesions, is thoroughly simple, that without any great scruples a surgeon can advocate surgical interference whenever there is a suspicion that this special organ has been involved.

When, as happens in some cases, there are indications of a peri-appendicular abscess (fever, abdominal rigidity, prolonged pain) during a number of days or during one or several weeks, and these indications disappear altogether, the condition obtains for an interval operation. In this sort of case, if the surgeon interferes too soon after an attack—that is to say, less than two months—he is liable to find strong, bleeding adhesions as well as the remains of the abscess. The operation under these circumstances is to be dreaded on account of its length, great care being necessary to cope with concealed haemorrhages, perforation of the bowel, and subsequent suppuration. Even peritonitis may be one of the sequelæ. Free drainage must be insisted upon, but

even though this important precautionary measure may be followed out to the letter, recovery is most tedious. The advice to wait the longest possible time after an acute and serious attack cannot be emphasized too strongly, as well as the prolonged use of ice, rest in bed and attention to diet. Unfortunately when patients are subjected to this treatment they grow thin and surgeon is compelled to remove restrictions from the diet. At the end of a month of absolute quiet a patient may be allowed to get up and resume some of his avocations, but the operation for the removal of the appendix should not be undertaken until about three months have elapsed. When this rule is followed the surgeon is often generally surprised to find the appendix free from adhesions and a confirmation of the previous diagnosis of the presence of an abscess during the acute attack.

Among the complications which may arise as a result of removal of the appendix in the interval, it is important to mention rupture, which results in leaving the extreme end of the appendix adherent to the iliac fossa, thus necessitating drainage of the wound at a point from which suppuration is slow to disappear. Rupture in appendicitis is inevitable when the appendix has been perforated near its center by a concretion. Upon dissecting the appendix it tears, and the concretion escapes into the wound; an accident which must be considered a disaster or, at best, a grave complication.

When the extremity of the appendix ruptured in this fashion is lost behind the ascending colon and the peritoneum of the iliac fossa, it is incumbent on the surgeon to give up tracing it through McBurney's straight incision. Fortunately it suffices to drain the wound; nevertheless, this complication is not in any way reassuring. The retrograde extirpation of the appendix and its subperitoneal should be part of a surgeon's knowledge, for in difficult cases recourse is had to them.

The operation during a crisis has distinctive points, the appreciation of which is indispensable to the success of surgical interference. *Imprimis*, we should consider in detail the early operation performed within a few hours of an attack, and the retarded operation, whether there be an encysted abscess or a peritonitis.

The early operation during the first hours of an attack is rarely done on account of the obstacles placed in the surgeon's way by the family, despite his sincerity in advocating it at once. But is it wrong to add that the infallibility of this sort of operation is yet far from being proved? Even for the cases which develop slowly this procedure has no advantages because only too often there is no corroboration of this diagnosis but an exemplification of the uselessness of the operation. In

serious cases, in gangrenous appendicitis, for instance, this method might be considered ideal, but when admitting this the thought should not be lost sight of that the operation must be done with celerity, within 12 hours of the initial attack, or at least, within 24 hours. Beyond this time, the operation assumes a sinister aspect, and I retain to this day the bitter memory of a case in which a gangrenous appendicitis that had already become encysted, succumbed very rapidly to an operation performed 36 hours after the seizure.

When there is an abscess in the process of forming, the operation is not only always serious but its prognosis is most dubious, since no surgeon can say with certainty that he will be able to evacuate the pus without opening up the peritoneum. Beyond a doubt, when the pus is in direct contact with the parietes, and, especially, when the abscess bulges plainly into the rectum, one incision with a bistoury will open it freely and effect a cure. But these very simple cases are relatively rare, and my experience has been that not infrequently an abscess though deep—retrocecal, retroepiploic or mesocelaic—may be concealed by the great omentum. But in all the other cases in which the surgeon is compelled to penetrate the healthy peritoneum so that the abscess may be opened, the prognosis is exceedingly problematic, and it were much better to protect the great omentum by means of compresses. The operator should also try to isolate the appendix by means of sutures connecting the cecum with the parietal peritoneum, according to the teachings of Duret, and essay to incise the retrocecal abscess by making a way outside the peritoneum, as is done when the iliac artery is ligated. Here also the prognosis is grave, and autopsies have often demonstrated that the operation really brought on the accident that the surgeon had greatly desired to avoid—namely, the rupture of the abscess into the peritoneum. This rupture, or at least extravasation, may even occur when the patient is moved from his home to the hospital, or while preparations are making for the operation, on account of the extreme fragility of the parietal boundaries of appendicular abscesses; a fragility which is due to the characteristics of the anærobic microbes, since these micro-organisms sphacelate the tissues but do not cause the formation of thick, false membranes.

The prognosis then in operations for general appendicular peritonitis is always extremely grave. It is somewhat less so if the operation occurs in the early stages of the disease, and appears to have its gravity lessened when the peritonitis reverts to an unmistakably inflammatory state, with violent reactions on the part of the system—fever, vomiting and the febrile facial expression..

On the contrary, the prognosis in cases of toxic peritonitis is high fatal, since this manifestation of the disease kills in the same manner as the other infections with which it has often been confounded—namely peritonitis with hypothermia, rapid decomposition of the intestinal tract, anuria, complete arrest of the feces and gases, and a pulse that is hardly perceptible. Under these untoward circumstances failure following an operation is about the only result. The irrigation or non-irrigation of the peritoneum, the manner of drainage, the position of the patient during the operation, the various subcutaneous injections, and the other means advocated to ameliorate this dire situation, are, in my opinion, of indifferent value.

My conclusions, after due study of appendicitis, are that it is much better to prevent an attack than to attempt a cure. Awaiting the day when it will be the proper thing to remove the appendix from everyone so as to do away with the disease altogether, I would advocate at present that when the appendix yields the slightest suspicion of being affected, its removal should be enforced.—*Interstate Medical Journal*.

THERAPEUTICS.

Ichthyol in the Treatment of Furuncles in the External Auditory Meatus.

FRITZ BRUCH:—The great variety of treatment recommended for furuncles in the external auditory meatus indicates that none is satisfactory. Politzer insists that every furuncle should be incised whether a yellowish tinge shows that pus has formed or not. The reduction of tension undoubtedly alleviates the pain but many patients decline this treatment, and in others, if the entire meatus is blocked, it may be impossible to decide whether the furuncle is situated on the anterior or posterior wall, and consequently where to make the incision. In such cases and also after incision Politzer recommends painting with 5 per cent. carbolyzed glycerine. The writer has not obtained good results by this method. Poultices over the external ear frequently increase the pain especially if the external meatus is completely obstructed. Besides moist applications, including hot fomentations, even though they occasionally ease the pain, provide a suitable temperature within the meatus for the multiplication of cocci and promote relapses. It is the frequency of relapses which renders treatment so often unsatisfactory. BEZOLD first incises, and then applies a dry plug of cotton wool well sprinkled with iodoform. BRUHL and HARTMANN both insist on incision in every case. The former uses in the after-treatment boracic

acid or perchloride of mercury dissolved in alcohol, the latter peroxide of hydrogen solution.

In the writer's experience the best application both for cases in which incision is refused and for the after-treatment of incised cases is ichthyol mixed with an equal quantity of glycerine. A wisp of cotton wool is fixed on an aural probe and soaked in the ichthyol solution. It is then introduced into the external meatus, and if the probe is rotated to the left on withdrawal remains behind. A piece of dry cotton wool is then inserted over the ichthyol plug. The method is applicable only to cases in which the external meatus is still permeable. Pain is relieved a few hours after the introduction of the plug, which on the following morning is often covered with pus. The pus, however, does not flow over and infect the entire meatus, but is absorbed by the plug immediately in contact with the boil. The remainder of the meatus is coated and protected with a thin disinfecting layer of ichthyol. Relapses are thus practically excluded. The treatment also avoids the eczema of the pinna which almost always occurs if moist warm dressings or instillations of carbolyzed glycerine are employed. The tampon is renewed once, or, if there is much pain, twice daily until the furuncle has completely healed.—*The Medical Review*.

OBSTETRICS AND GYNÆCOLOGY.

Veronal with Vomiting of Pregnancy.

We extract the three following cases from a paper by A. REICH and A. HERZFELD, of New York:

L.B., Primipara, 23 years old, suffering from hystero-epilepsy, for which she was treated with the bromides. Severe vomiting set in during the sixth week of pregnancy, which persisted for two weeks before the first dose of 4 grn. of veronal in hot water was given. The patient took 15 grn. daily for two days. The vomiting ceased and did not recur during the pregnancy.

E.W., 27 years old, 2-para. The patient was formerly a teacher, and was always well, but very excitable and "nervous." Soon after conception there was frequent and severe vomiting. All kinds of drugs were tried. After 2 grn. of veronal three times a day, in hot water, the emesis was checked immediately, and did not recur throughout the entire pregnancy.

H.A., Primipara, 35 years old, and the sister of above patient. Soon after conception frequent and severe vomiting set in, which was checked, after the second day, by 2 grn. of veronal every three hours, in hot water. There was no recurrence up to term.—*The Canadian Practitioner & Review*.

Death Following a Vaginal Douche of Lysol.

In the Prague Clinic the writer was accustomed daily or on alternate days to give vaginal douches of 4 or 5 litres (8½ pints) of a 1 per cent. solution of lysol to every primipara over 30 as a prophylactic against rigidity of the os. The results were satisfactory until the following case occurred.

During the administration of a lysol douche the patient suddenly complained of cardiac oppression. The pulse became infrequent and the face cyanosed, and shortly afterwards respiration was slow and superficial with tracheal rattling. After artificial respiration with massage of the heart the woman regained consciousness and exclaimed that she was dying. Consciousness was again soon lost, and in spite of all attempts at resuscitation death occurred three hours after the injection was given. The child died simultaneously. Post mortem the only abnormality found was that the placenta near the internal os was slightly detached. There was no air embolus.

The injection was given by an experienced midwife in the writer's presence with the patient in the usual examination position. There was no discharge of blood. The only theory which would explain the facts is that the lysol was absorbed from the small area of placental detachment.

The writer has given no intra-uterine douches even in cases of retained and decomposing placenta—during the last 14 or 15 years. The only exception he makes is to give an intra-uterine injection of 50 per cent. alcohol in retention of lochia with pyrexia. Before this period some cases of puerperal tetanus occurred, and all obstetric operations were as far as possible avoided. The results are at least as good as when intra-uterine douches are given and the rigors so common after injections are avoided.—*The Canadian Practitioner & Review*.

The Vomiting of Pregnancy Treated by Adrenalin.

REBAUDI speaks highly of his experience in the treatment of a severe case of hyperemesis gravidarum of more than two months' duration by means of adrenalin in small doses. Various remedies had been tried, and artificially-induced labor was seriously contemplated. In whatever way the drug acts—whether by neutralizing the toxins produced in pregnancy, by toning up the nervous and muscular system, as an antitonic, as a stimulant of tissue change, or as a regulator of the vasomotor system, or in any of the other methods which have been

theoretically suggested—the author is convinced of its great therapeutic success in the cure of obstinate vomiting of pregnancy.—*The Canadian Practitioner and Review*.

OPHTHALMOLOGY.

Absence of Iritis and Choroiditis among Syphilitics who have become Tabetic.

E. F. SNYDACKER has made the observation that in all the cases of tabes whose eyes he has examined there is an entire absence of evidences of syphilis in the eyes, such as iritis or choroiditis. Further, of 79 cases of syphilitic iritis and 42 cases of syphilitic choroiditis, of which he has records none has developed tabes so far as he has been able to follow them. In looking through the medical literature he finds the same observation made by Wernicke in regard to tabes and by Wintersteiner in regard to paresis. Wernicke has laid down this dictum: "Syphilitics who have suffered from specific iritis or choroiditis do not acquire tabes." While this seems to be a very broad statement, Snyder's limited experience seems to verify it.

Wintersteiner examined the eyes of 1,000 patients, all of whom, he believed, were syphilitic and found that the optic nerve was affected in 28.5 per cent. of the cases, there were choroidal changes in 3.86 per cent. of the cases and iritic changes in 1.76 per cent. Thus the uvea, iris and choroid, was affected in 5.62 per cent. of the cases, or about one-fifth, as often as the optic nerve. Snyder compares this with the following statistics taken at random from the literature:—

In 114 cases of syphilitic eye diseases Drewes found the uvea involved 73 times, the optic nerve 4 times; Alexander in 1,385 cases found the uvea involved 331 times, the optic nerve 107 times; Galezowski in 123 cases found the uvea involved 52 times, the optic nerve 31 times. Eveille in 301 cases found the uvea involved 143 times, the optic nerve 58 times; Schubert in 231 cases found the uvea involved 156 times, the optic nerve 8 times; Badal in 793 cases found the uvea involved 383 times, the optic nerve 139 times; Talbot in 434 cases found the uvea involved 262 times, the optic nerve 60 times; Boeck in 139 cases found the uvea involved 126 times, the optic nerve 5 times; Stammwitz in 197 cases found the uvea involved 40 times, the optic nerve 14 times. The total of these syphilitic cases shows that the uvea is involved nearly twice as often as the optic nerve, whereas Wintersteiner, in the 1,000 cases paretic dementia found the uvea involved only about one-fifth as often

as the optic nerve. The author thinks the difference is too great to be merely accidental and believes we are justified in concluding that where paresis is present the uvea is not nearly so likely to be involved as the optic nerve. He does not agree with Wintersteiner's theory that sometimes the syphilitic poison attacks the ectodermic structures, in which case the cerebro-spinal system suffers most, while at other times the mesodermic structures are attacked, in which case the iris and choroid with other mesodermic structures are affected and the nerve tissue escapes. This theory seems irrational to him. He suggests one based upon Ehrlich's theory of antibodies. Von Wagner has long noted the fact that most paretics have had the secondaries of syphilis very lightly. If tabes and paresis are due, not directly to syphilitic virus but to the injurious action of antibodies upon cord and brain, it would naturally follow that the more antibodies there are the greater the danger of tabes or paresis. Antibodies are largely absent where secondaries are severe. As iritis is generally a secondary of syphilis, the antibodies not being present in large numbers, there is not much danger of tabes. But on the other hand, if the secondary symptoms of syphilis are absent, not because of active antisyphilitic treatment, but because of the large number of antibodies, there is no iritis but much more danger of tabes. This theory agrees with the recognized fact that tabes and paresis is more frequent among syphilitics who have had little effective treatment and yet have had slight secondary manifestations of the disease, their symptoms being controlled not by effective treatment but by large quantities of antibodies which later acted destructively on the brain and cord. If this theory be true a syphilitic patient who has had iritis can be assured that the chances of his suffering later from tabes or paresis are very small, an assurance which may save intelligent patients a great deal of mental-anguish.—*The American Journal of Ophthalmology*.

THE ANTISEPTIC.

JUNE, 1910.

Medical Registration and Ayurvedism.

HE problem of Medical Registration has been agitating the minds of Medical Practitioners in India for many years past. As time goes on, the necessity for such a step is felt all the more keenly, especially as large numbers of young and capable men are coming forward, equipped with the latest knowledge of the profession. The campaign against the unqualified practitioner has not been unwatched by the Government who have, so far, apparently remained in inaction awaiting popular education on the subject.

Strictly speaking, State recognition of medical qualifications can only be extended to such of those qualifications as are endowed after a scientific training at an institution competent to impart the requisite education. Ayurvedic Medicine has put in a claim for State recognition on lines essentially similar to those of Modern Scientific Medicine. We shall examine the justness of its claim briefly. The ancient Rishis of the Himalayas, from whom Aryan Medicine had its origin, stipulated certain forms of rites and observances in case of disease. These stipulations assumed a highly dogmatical form, especially when a divine origin was ascribed to their knowledge that was not to be questioned under any circumstances. This dogmatism had such a hold on the credulity of the people that investigations and inquiries about vital phenomena were not undertaken for long ages, with the result that Empiricism made headway only by very slow degrees, and Rationalism was completely unknown. In Greece, on the other hand, the Dogmatism and the Empiricism of the Æsculapian and Hippocratic Schools were succeeded by Rationalism as anatomical facts began to be discovered by the dissection of the human body. Rationalism cannot, of course, be said to have attained its final perfection yet, but there is no question about the fact that Rationalism is the only means by which vital processes can be intelligently understood and dealt

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with. The essential pre-requisite for a rational understanding of Medicine is a knowledge of certain Biological Laws which in turn presupposes a knowledge of the Chemical and Physical properties governing matter and forces in their various forms. With these sciences as the basis, experiments are undertaken under definite conditions upon the bodies of lower animals, their effects observed and noted, and the logical inferences recorded, in the light of previous knowledge. The results of these experiments are then applied in Practical Medicine with all due care—applied by men who know what they are doing, and what consequences are likely to arise from them, and know, besides, what ought to be done to meet those consequences. It is in a way an empiricism so far as the human body is concerned; but it is an empiricism justified by previous experimental evidence obtained at the sacrifice of less valuable lives. When Rationalism is perfected we may expect the element of Empiricism to disappear. Now let us see how far Modern Aryan Medicine approaches modern rationalistic ideas. Practically, Aryan Medicine is at the present moment more or less where it was centuries ago. It may be that a number of new drugs are being used, that were not prescribed by ancient physicians; but it does not follow that these new drugs are being administered with any more advanced state of knowledge of the bodily functions than was the case in ancient times. The Western Pharmacopœas have succeeded in effecting an entry into Ayurvedic Practice with very much greater ease than the Western Theories and Principles of Rational Practice. Without a training in Chemistry, Physics and Anatomy, Physiology and Pathology are bound to remain unintelligible, and rational medicine cannot exist. We know for a fact that these allied sciences remained neglected for centuries in Aryavarta, and they remain in that same state at the present day, among the class of people that take to Ayurvedic Medical Practice. How then can Ayurvedism be said to have been revived when the sister sciences have been completely forgotten? Are there many facts established in Ayurvedic Medicine, that are the outcome of experiments? Could anybody competently conduct an experiment without the knowledge by which it can be properly conducted and conclusions drawn therefrom? On the other hand, if it is suggested that the revival of Ayurvedic Medicine will profitably be undertaken in the light of Modern Chemistry and Physiology, we unhesitatingly say that, barring the archæological interest that may be awakened thereby, those labours will not be repaid. We suppose that the ostensible endeavour to exhume Aryan Medicine from its forgotten depths and reinstate it side by side with Rational Scientific Medicine, arose out of a desire to nationalise Indian Medicine on purely Indian lines. In our opinion, the right way to improve Indian Medicine

is to grasp, at the very outset, all the facts available in the world of Medical Science so far as they have been established, and, after that, apply those facts experimentally to the diseases and conditions peculiar to India, and to the drugs indigenous to it. To prescribe the most modern Pharmacopœal drugs indiscriminately, with only the Ayurvêdic theories and notions of diseases for guidance, is neither Ayurvedic Practice nor Western Medicine. It is a procedure fraught with disastrous consequences. Supposing we place at the disposal of a warrior of the ancient bow-and-arrow type a modern quick-firing machine gun and explosives, even with full directions to use them, what shall we expect to happen? We expect (and that expectation will soon be fulfilled) that he would kill where he did not wish to kill. He should either have been trained previously to use the dangerous engine, or been wisely advised not to handle what he knew nothing about.

Another reason sometimes put forward for keeping the unqualified practice intact, is that the poor cannot afford to pay the expensive fees of the University Doctor. There are different grades of qualified Medical practice in this city, as elsewhere; and, together with the hospitals and dispensaries set apart for the poor, the deserving poor are being attended to. Are we to understand that the unqualified practitioner is any more a lover of the poor than the 'Varsity Doctor'? The truth is that, from ignorance or parsimony, the individual who can pay for a superior and safer treatment, is not enabled to choose between the really competent man and the all-professing and irresponsible quack. Or, if ignorance will stolidly persist to seek unsafe medical advice from questionable quarters, the educated members of the Society ought to see to it that those questionable resorts are unmistakably painted in their true colour. The constant city-dweller has learnt to discriminate between the quack and the physician. On the other hand, hundreds of sufferers from the moffusil, to whom the very names of the seats of learning and of the sciences are a therapeutic calumny, often find themselves gone over to the wrong doctor, and taken the wrong medicine, — and, unfortunately, with the wrong result.

Next, let us enquire if Madras would be left at the mercy of Malaria without a sufficiency of Medical men if the present unqualified practice is prohibited at once. The proportion of qualification-holders to, say, a thousand of the population in the city, is no doubt small. The supply of medicines in the hands of qualified Chemists would also be inadequate to meet the demand. Is it not likely that this demand will be satisfactorily met by qualified Physicians and Chemists if their interests are safeguarded by the suppression of unfair competition?

We have been asked by an Ayurvedist :—"What does it matter whether a diarrhœa gets cured by a dose of castor oil given by a mere Ayurvedic hand, or by the same dose of castor oil administered by the hand that had brilliantly performed the most elaborate of laboratory experiments right in the bewildering midst of microscopes and other hair-splitting appliances? It is cure that is desired, and that has been attained. Are not the results the better judges of the methods than the means of finally arriving at those results?" There are diarrhœas and diarrhœas; in other words, some kinds of diarrhœas get prompt relief on the exhibition of certain drugs, whereas there are others where the same drug produce the opposite effects. Does the Vydyan possess the pathological knowledge that would enable him to differentiate the one kind of diarrhœa from the other? To him it is all 'diarrhœa'; and he has had that complaint often cured by a dose of castor oil; and although he may by experience know that that drug is not to be prescribed in all forms of this complaint, he is in most instances left without being able to decide for or against that method of therapy in concrete cases. Diarrhœa is not all that the Ayurvedist undertakes to treat. And, as regards castor oil, that preparation is now a-days part of the kitchen outfit, as it were, in every household, and every child knows fine the immediate as well as the ultimate effects of a dose of that potent oil. We are inclined to think that the very successes of the quack, phenomenal as they are in a good many cases, is a menace to public life; for, these occasional successes engender in the minds of a portion of the public, a confidence in quackery, even when more serious maladies have to be faced. Is not the quack partly to blame for the inconstancy of many a patient who changes his medical attendant almost with surprising rapidity because he is being given false hopes of cure, in a miraculously short space of time, of diseases that require months of the most patient and watchful treatment? The quack that boasted of his castor oil treatment will have quite a different story to tell, when, as we have seen once, a hernia of the bowel ends in serious strangulation by the neglectful treatment adopted by him—which was, in the case referred to, a pair of blisters applied on the flanks, together with two holes bored into the pinna of the ear! What is the Ayurvedic *rati nāle* here? Or, do the Ayurvedists blame the mere quack for such a plan of operative procedure? Be it Ayurvedism, be it Avedism, we fail to obtain a sufficient justification for such methods of therapy when we test them on the only reliable touch-stone of truth—rational scientific investigation.

Hygiene is a science unknown to the quack—excepting that he might have known a few rudimentary facts about the old-time health-

laws as they existed in an Arcadia. But the present is not the time, nor the modern city the place, for the exercise of those crude notions about health. It is the Family Doctor, and he alone, that can advise the ignorant poor on matters of bodily and domestic Hygiene—and this, in the aggregate, forms Sanitation in the more extended sense—by inculcating little rules and details about living, at each of his visits. Surely, the quack, even the most refined quack of modern days, is not the person fitted to administer information on Sanitation in a crowded city (which, by the way, is the most formidable problem Preventive Medicine has to solve in India). How then can Hygienic ideas penetrate into the hearts of the poor households where Quackery sits enthroned and condemns all scientific light to be extinguished!

This, then, is "Ancient Medicine," made up-to-date! Without any kind of preliminary scientific education, without the elementary knowledge of the organs of the human body that have to be handled, without any attempt at improving the personal surroundings of the people exposed to various harmful disease agencies, but *with* the most up-to-date of Pharmacopœal drugs, Ayurvedism, or Aryan Medical Science, has been modernised! Is not what is known as "Quackery" the degenerate remnant of a practice that was legitimate in a former era, although the best practice known in that era?

To our mind, the Ayurvedist's claim for registration, comes with as great a shock as it would to the London Physicians of to-day, to see, that Hippocrates has suddenly started out of his grave, after a restful sleep of more than twenty-two centuries, and claimed freedom to practise medicine on equal terms with the Harley Street Specialists!

Let us hope, however, that the proposed Indian Medical Reform of Lord Morley would be comprehensive, and protect the interests, of the public, of the qualifications that the Government institutions confer on deserving men, and, of the existing unqualified practitioner. The public demand a sufficient number of medical men for the service, a reliable qualification for the lowest grade of that service, and some distinguishing mark whereby the merits of each qualification can be understood at a glance. In course of time, as circumstances may direct, unqualified practice should cease—the practice of the so-called "Medical Practitioner" who has not had the benefit of a scientific training in medicine or a course of instruction in the properties of drugs. To instill efficiency into the qualified practitioner, opportunities should be given, as in England, at least to the best graduates of the academical year, to undergo training for a year or so, as honorary House-Surgeon

or House-Physician in the wards of the Government Hospitals. Post graduate training would thus be encouraged, and the independent Medical Practice be undertaken, not by the fledgling graduate who is full of his lectures and convoluted theories, but by men who have distinguished themselves at College, and have subsequently had some practical experience under scientific supervision.

As regards the unqualified practitioner, he is at present a necessity, in so far as the sudden disappearance of him from our midst will create hardships to the poorer classes of people, and the present qualified service will not be able to cope with the additional work of medical relief. However, the trend of reform should, we suggest, be to redeem him from irrational practice. This, of course, practically results in the gradual extinction of Ayurvedism as such, and its displacement by rational treatment. The problem is, we admit, a complicated one; but the results to be attained are of vital importance. We earnestly hope the Reform proposals will be framed in a liberal manner, and be administered by the Medical administrative machinery in a fully sympathetic spirit.

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Original Articles.

* MENTAL DEFICIENCY IN INFANCY AND CHILDHOOD.

BY

H. EMLYN JONES, M.R.C.S. (ENG.). L.R.C.P. (LOND.)

Medical Inspector of Schools, Essex County Council.

I.

INTRODUCTION AND CLASSIFICATION.



UNTIL quite recently, the definition of this group of children was extremely wide and variable, but in the Report of the Royal Commission on the Care and Control of the Feeble-Minded, 1908, definitions are given to cover all grades of Mental Deficiency. This "Mental Deficiency" or "Amentia" is that state of the mind in which the mind has failed to attain normal development, and may be defined as "that state of mental defect existing from birth or from an early age, due to incomplete cerebral development, in consequence of which the person affected is unable to perform his duties as a member of Society in the position of life to which he is born." It must be clearly distinguished from "Dementia," which may be compared to a state of bankruptcy of the mind, in which, though originally normal, a mental defect has occurred subsequently to mental development.

THE DEGREES OF AMENTIA.

1. *Feeble-mindedness.*—One who is capable of earning a living under favourable circumstances, but is incapable of (a) competing on equal terms with his normal fellows or (b) managing himself and his affairs with ordinary prudence, by reason of some mental defect existing from birth or from a very early age.

Specially contributed to The Antiseptic.

The "Mentally Defective" children under the Act of 1899 are defined as "those children, who, not being imbecile, and not being merely "dull and backward," are, by reason of mental defect, incapable of receiving proper benefit from the instruction in the ordinary Public Elementary School, but are *not* incapable by reason of such defect of receiving benefit in such special classes or schools as are in the Act mentioned.

2. *Imbecility*.—The "imbecile" is defined as "one who, by reason of mental defect existing from birth, or from an early age, is incapable of earning his own living but is capable of guarding himself against the common dangers."

3. *Idiocy*.—The "idiot" is defined as "one so deeply defective in mind from birth, or from an early age, that he is unable to guard himself against the common physical dangers."

4. *Moral Imbecile*.—This is defined as "one who displays from an early age, and in spite of careful upbringing, strong vicious or criminal propensities on which punishment has little or no deterrent effect.

These definitions, the Commission states, are for "practical purposes only," and though open to criticism are for ordinary purposes sufficient both clinically and educationally.

Unfortunately it does not provide for that large class of School Children, who, though they cannot be classed as "Mentally Defective" or "Imbecile" are dull and backward, and for whom at present no special class exists in our public Elementary Schools. With the advent of regular medical inspection of schools, most of our Educational Authorities are instituting special classes for the defectives (*i.e.*, those capable of being trained by special means), and are also excluding from all our schools the Imbeciles, who, until some better means be forthcoming, should pass under the care of the Poor-Law Authorities.

Once a mentally deficient child has been certified fit for a special school or class, it can be kept under the control of the Educational Authority until it reaches the age of 16 (*i.e.*, 2 years longer than a normal child), but at present, there is nothing to prevent such child, on attaining that age, from going out into the world amongst folk of normal mental power, and perhaps marrying, as unfortunately many do, and so producing others with a mental capacity fit below normal.

Since the publication of the evidence of the Royal Commission on the Care and Control of the Feeble-Minded, and the regular Medical Inspection of School Children, forces have been acting in the direction of

State Control of all such children, even after they have attained their sixteenth year, and it is to be urgently desired that such forces will result in the early passing of an Act of Parliament to some extent preventing the freedom of these children, or at any rate forbidding their marriage.

The chief function of a definition of the different grades of mental deficiency existing among children is to enable one to classify them suitably from the point of view of giving facilities for their education. The practical difficulty which arises to-day is that, even where provision is made in the form of Special Schools for Feeble-Minded Children, no such special provision is made for children merely "dull and backward," and at the same time the provision for those children who may be classed as "Imbeciles" is so very poor and inadequate.

CLASSIFICATION.

This should be considered from two points of view, the Educational and the Clinical.

A.—THE EDUCATIONAL.

In the examination of school children, I usually divide the children presented for mental deficiency into the following groups:—

1. *Dull and Backward*.—This may be due to general neglect on the part of the parents or guardians and to the general environment to which the child has been exposed, and in some instances failure on the part of the Teacher to at all grasp the various types of childhood and mental defects associated with child life, or even if such teacher grasps these facts, his inability or lack of patience to train such children. Quite 50 per cent. of the children presented to me as being probably mentally defective fall into this group. As I have mentioned above, there being at present no special arrangements for such children in our Public Elementary Schools, they are obliged to stay among the ordinary scholars, advice being given to both Parents and Teachers as to their training and teaching, and urging the need of special attention, if the latter is at all possible. The majority of this class, if placed under proper environment and trained by an intelligent and patient teacher, can be brought up to the average mental attainment of the present-day child.

2. *Too bad for Special Day School, but could be trained in a Residential School*.—Most of the Educational Authorities are now opening Residential schools for these children.

3. *Special Day School sufficient*.—The majority of the mentally deficient children in our Public Elementary Schools fall into this group.

4. *Those undoubted Defective cases over 13 years of age.*—As a general rule, a mentally defective child, who has had no special training up to 13, is unlikely to receive much benefit from such training after that age. Hence, unless they are exceptional cases, I do not recommend these children for Special Schools. This class will tend to greatly diminish, and in a few years die out, for by the regular inspection of all school children, they will be marked out and removed to suitable places long before they attain this age.

5. *Those benefitted for a time at a Special School to enable them to catch up to Standard II and then possibly be transferred back to Public Elementary Schools.*—One finds quite a number of children, who, when placed under special training, develop mentally to an astounding degree, and in a year or two are quite up to Standard II of an ordinary school. Probably the majority of these should be classed in a sub-division of Group I, and are not really suffering from "Amentia" at all, but when examined by reason of their extreme backwardness often combined one or two of the stigmata of degeneracy, become labelled "Mentally Defective." Personally I am of the opinion that no child suffering from any degree of true Amentia is ever fit to rejoin an ordinary school, however much special attention has been paid to such a child at a special school. However much a truly mentally deficient child improves under treatment, there is always something lacking which is present in the normal child.

6. *Infants under 7 years of age who will probably turn out to be Mentally Deficient.*—No child under 7 should be admitted to a special class, but one finds many of such children who should be carefully watched and regularly examined both physically and mentally, so that they may be removed as soon as they have attained a reasonable age. "Seven" may be taken as a reasonable age, as this is the age at which an average child leaves the Infant School for the Upper School.

7. *Doubtful cases to be reported on in the following year.*—Though we might expect these to form a large group, such is not the case. Practically all the cases who are likely to receive benefit by special instruction can be placed in one or other of the above groups.

8. *Imbeciles and Idiots.*—These should be excluded both from ordinary and special classes, and until some adequate arrangement is made for them, either by the State or by the Local Education Authority, they should, if possible, be removed to the Home for Imbeciles or immediately come under the supervision of the Local Poor-Law Authorities. At present, many are unfortunately allowed to run wild in the streets and roads.



ILLUSTRATIONS OF "GENETOUS" MENTAL DEFICIENCY.

These children are of Jewish parents, Twins, *act.* 14¹/₂.
The remainder of the family are of normal mental capacity.
The girl on the right of the Photograph would be classed as a "Moral Imbecile." The incoordination of the girl on the left is extreme.
She could not be kept still one second.
Mental power of both girls extremely poor.



A slight degree of Microcephaly. Girl, *act.* 9. Head measured 18¹/₂".
On the right side of the forehead and around the right orbit is seen a large port-wine stain.
Her mental power is very slight.

B.—THE CLINICAL.

Many attempts have been made to classify the various types of "Amentia" both from pathological and etiological standpoints, but at present there is no scheme which is wholly satisfactory.

From the pathological side Tredgold (¹) has suggested the following:

CLASS I.—*Amentia due to Cerebral Disease.*

- (a) Epileptic and Eclampsic.
- (b) Vascular, Toxic and Inflammatory, including certain clinical types, *e. g.*,
Poyencephalic
Sclerotic
Hydrocephalic.
- (c) Syphilitic.
- (d) Infantile Cerebral Degeneration.

CLASS II.—*Amentia due to Defective Cerebral Nutrition* due to either qualitative or quantitative anomalies of the blood supply, or occurring as a result of the deprivation of nervous stimuli from without—

- (a) Cretinism.
- (b) Amentia due to defects of nutrition
- (c) Amentia due to isolation or sense deprivation (*e. g.*, loss of hearing and sight).

In the large majority of cases Amentia is due to developmental defects during foetal life, but there remain some due to causes acting after birth, and probably some due to causes acting during birth.

Probably the best classification at present existing, at any rate for the School Medical Officer, is that made on purely Etiological grounds as suggested by Ireland (²) and modified by Still (³) and placed in their order of frequency.

Chiefly "Developmental"

Mental Deficiency:—

Genetous.
Mongolian.
Spastic (generally associated with the cerebral palsies of childhood).
Microcephalic.
Cretin (including the Sporadic, Endemic and Myxoedematous forms)
Hydrocephalic.

Chiefly "Acquired"

Mental Deficiency:—

Epileptic.
Eclampsic.
Syphilitic including Infantile Tabes and general Paralysis).
Traumatic.
Inflammatory.

Amaretic family Idiocy.
Hypertrophic.

AMENTIA FROM DEPRIVATION.

(A child deprived of two or more of the principal senses, e.g., sight and hearing.)

Of those classed as developmental, the hydrocephalic are occasionally, and the spastic frequently acquired. The term "genetous" is not used to denote merely "congenital" cases but to include that large class of children which cannot be classified on pathological grounds, and which unfortunately forms practically half the number of cases which come under observation. As a rule there is nothing distinctive in the appearance of those forming this group, and though frequently one or more of the physical stigmata of degeneracy are present, more often than not they are absent.

Regarding the "Microcephalic" group the question is often asked: "What is the size of head that constitutes Microcephaly?" Though, generally speaking, the head of a microcephalic child is 2 in. or more less than that of a normal child, it is not so much the actual size as the disproportion between the size of the cranium and the size of the face. The vault of the skull becomes arrested in its growth whilst the remaining parts continue to grow, and consequently the forehead comes to slope backwards in its characteristic manner.

Regarding the "Eclamptic" and "Epileptic" varieties, the mental deficiency in the former is that produced by a severe bout of convulsions, whereas in the latter it is that produced by recurring attacks of epilepsy.

The deficiency produced by "Inflammatory" lesions generally depend on some encephalitis or meningo-encephalitis with a pathology similar to those cases of encephalitis affecting the motor cortex and producing Infantile Hemiplegia. In these latter, if the process is extensive, the hemiplegia is combined with mental deficiency; whereas, on the other hand, if the lesion be confined to parts of the cortex other than the motor areas, mental deficiency or imbecility alone will result.

By the term "Hypertrophic" deficiency I mean those cases in which the child has been normal until a year or two old, and has then suffered repeated attacks of severe headache, becoming progressively more dull, and usually dying towards the onset of puberty.

In these cases the brain has been found very large and heavy, with a great increase of the neuroglia substance, together with a lack of nerve cells, but little or no hydrocephalus.

(To be continued.)

References—

- (1) Mental Deficiency (Amentia).—TRENGOLD.
- (2) Mental Affections of Children.—IRELAND.
- (3) Common Disorders of Infancy and Childhood.—STILL.

*PLAGUE INOCULATION IN MYSORE.

BY

MR. P. S. RAMACHANDRIER,

Hon. Sub-Assistant Surgeon, Mysore Medical Service.

(PART I).

[PREAMBLE].

Mysore is the capital of the "Model State" of that name. It possesses several advantages, such as an enjoyable climate, beautiful natural sceneries, graphic buildings, a well-regulated Government, and contented people. A decade ago, the people of Mysore, being naturally of a contented disposition, were happy, though often molested by the then unchecked prevalence of Malaria. The advent of Plague in India did not permit the people of Mysore to enjoy a continued peaceful and happy state of mind. Soon after its outbreak in Bombay, Plague travelled over to Bangalore, the *de facto* seat of the Government of the State, in spite of all the preventive measures which were then adopted with all the rigorousness which such measures wanted to receive, such as Railway inspections, passporting, segregation camps, etc. It then travelled over to Mysore. Ever since its appearance, it has been playing havoc year after year.

BLESSING IN DISGUISE.

We are often blind to the several blessings which inflictions of the nature of pestilential diseases confer on human beings, and it appears to me not out of place to mention here what blessings the appearance of plague has conferred upon the city of Mysore. I may claim to represent the state of affairs in its true colour, before and after the advent of Plague, since it was in my lot to spend my earlier days for over ten years in the city when it enjoyed a calm and peaceful run of life, and now it fell to my lot again to be in Mysore on Special Duty. In short, the city, a little over a decade ago was of the model of any old city in India, with over-crowded houses, with no proper supervision of daily conservancy, with no check on construction of houses, and with several acts of commission and omission of all sanitary laws. The advent of Plague in 1898 roused the authorities in Mysore into vigilant action as it did elsewhere. Though it may in general be said that greater attention began to be paid by Government for the removal of all insanitary conditions, and for the improvement of the existed sanitary ones of all cities, towns, villages and hamlets of the whole province, still it appears to me that much has been the labour, greater has been the outlay, more concentrated has been the energy spent for the improvement of the two important cities of Bangalore and Mysore. Even here,

* Specially contributed to *The Antiseptic*.

to an impartial judge, Mysore appears to have received greater attention in this respect than Bangalore. And it was as it ought to have been, considering the era of its existence, and the importance it assumes as the capital of the province. For instance, there was never a creation of a separate body as the Improvement Trust Board in Bangalore which, to its credit, must be said has done a lot for Mysore city as the demolition of existed uninhabitable houses, the opening of scavenging lanes, the widening of the streets, the extension of the town, the construction of drains, and several other works of the nature of public works. Thus I am inclined to say that Plague has brought on a blessing in disguise.

DIRECT PREVENTIVE MEASURES.

The above improvements have greatly contributed to the raising of the powers of the resistance to diseases, in other words, have increased the natural immunity of persons. But whether they have acted as direct preventive measures is a point on which opinions may differ. The answer will depend on the view taken as to the relation that insani-tary conditions bear on the incidence of Plague. I concur in the view that plague is primarily a disease of rodents, and is spread to man through the agency of rat-fleas. Hence it follows, "no rats, no plague." Therefore the direct ideal measure would be a complete extermination of the rat population, and the construction of rat-proof houses. But it must be admitted by all right-thinking men that these measures are only ideal and not at all practicable. However, in the matter of rat destruction, some attempts are being made, but public co-operation in the matter is never given.

PLAGUE UNAVOIDABLE.

It follows as a sequence of the impracticability of adopting the above enumerated direct measures, Plague must be our annual visitor until it dies a natural death. The above is not an assumption or presumption on my part but a conviction come upon me after a close study of the history of plague in several parts of the world. It behoves, therefore, that we must be prepared to meet this contingency by measures adopted to subside the havoc, which science and experience have taught us. Those measures are evacuation and inoculation.

EVACUATION.

Evacuation, no doubt, is by far preferable to inoculation, the former being natural, the latter being scientific. It must be acceded that science can only help nature's methods and not replace it. But nature is very imperative and exacting. Unless we could adopt in completion its ways, entire success can never be attained. Complete evacuation of large cities can never be done and as such, the only hope must be centred on the scientific method of combating Plague, namely, Inoculation.

INOCULATION.

It was therefore a wise decision of the Sanitary Commissioner in Mysore, Lt. Col. J. Smith, M.D., I.M.S., to start inoculation on a large scale, and he deputed several officers for the purpose, myself being one of the lot. It is not my intention in this paper to give anything beyond what has been my experience, reserving for the next contribution, the general outlook of the work of others and the result thereof on Plague incidence. Immediately on arrival in Mysore on this duty, I saw the President and the Health Officer of the Municipality. Both of them gave me to understand that it was settled that the campaign should be begun from 1st September, 1909. The Health Officer, Dr. V. L. Manker, formerly of the Plague Research Commission, was, however, to inoculate the President himself the next day at his private residence. I requested both of them to give the honor of inoculating him in public, placing before him the benefits that such a procedure would have in inspiring confidence in the minds of the ignorant public in this protective method. This was happily agreed to. As was arranged, the morning after my arrival, *i.e.*, 29th of September, the President with his Assistant Commissioners, the Health Officer with some of his staff, Mr. Lingaraj Urs, the Durbar Bakshi of the Palace who had much influence in the locality, Mr. Anniah Pandit and myself met at Dodda Holagere, or that portion of the town where the 'Untouchables' live. The infection was just commencing in that locality. We collected as many leading men of the community as we could get at the time. I delivered an impressive lecture on the benefits of inoculation in the language of the country, Canarese. The Health Officer set a bright example by coming forward, and 96 more followed from out of a set of people who it was feared could not be easily persuaded. The same evening, the President Mr. K. Chandy, who was also the Deputy Commissioner, in other words, Collector of the District, was inoculated in another important but troublesome centre called Mandi with the result that 68 more followed. Thus the good luck of opening the campaign fell to my lot.

THE REWARD SYSTEM.

Giving a small remuneration of annas four for adults and annas two for children for the cooly classes amongst the inoculated was graciously sanctioned by the Government of His Highness, the money being provided from the Sanitary Grant. Most of the inhabitants in large cities in India depend on some sort of cooly work for their daily bread, and that Plague is also rife amongst them in a greater proportion

than amongst the middle and well-to-do classes must be acknowledged on all hands. In this respect Mysore forms no exception. Taking into consideration the fact that the reaction after inoculation takes at least two days to allow the people to resume their work, it struck me frequently that some additional inducements must be given, and that by some charitable gentlemen of the town. With this object in view, I tried to influence some favoured private persons to supplement the Government aid either by kind or coin. Several who were in a position to help did specious promises, but failed to keep to their words.

AN UNEXPECTED SOURCE.

Having lost all hopes in private charity, the work was being pushed on with calm persistency. The daily figures of inoculation were not as satisfactory as one would wish in that cause. Driving one morning in front of the market homewards with a heavy heart in not having been able to inoculate more than a hundred, a large house caught my vision. Enquiries were at once instituted as to the charitable disposition of the inmate of the mansion. But the information given to me was disappointing. However, it struck me that a trial would cost nothing. So, alighting from the carriage, I introduced myself to the master of the house, and requested his permission to allow me to inoculate the passers-by on the verandah of his house, which was readily granted. The gentleman is the son of an enterprising contractor in Mysore, by name Nilgiri Papanna who died five years ago, leaving a large legacy to his only heir, Sowcar Nilgiri Maddanna. He being an unassuming and exclusive sort of a man was not much before the public view. Yet the hereditary tendency of his father in doing public charity was lying dormant in him and it only wanted a little ignition, as will be evident from the following.

INTRODUCING THE THIN END OF THE WEDGE.

Luckily on the day I began in his house, the Dewan with the Deputy Commissioner paid a visit to my place of work. I was just then preaching the benefits of inoculation to those assembled round me, and inoculated a few. The crowd being sparse, it soon dispersed. I was waiting for more persons to collect, but the attractions that I had on hand, namely, that of my bodily presence, and Kapadia's Lamp burning, were not enough to gather any people. It then struck me to suggest to the Dewan that a Gramophone would probably attract a crowd. The Dewan graciously permitted me to buy one at his cost. I accordingly bought one at a cost of Rs. 61-8-0, which, by the way I must

say, was of immense service to congregate people and to give me an opportunity for driving home the advantages of inoculation. Now turning to the point, a magnate of the State having stepped into the house of the Sowcar, I thought that to be a fit opportunity to introduce the thin end of the wedge, and I told him what Sowcars of his stamp did in Bangalore Cantonment to popularise inoculation by giving sweets, &c. On this suggestion, he immediately ordered a maund of sweets to be bought and given to children who get themselves inoculated. Gradually I got it extended to men and women. Later on he munificently added the gift of a cloth and rice. These brought in a large number for inoculation as will be seen from the following weekly figures:—

313-621-515-539-1,157-1,636-1,513-666-391-551-371-183-133-114-62. Thus the Sowcar expended on this philanthropic work somewhere between three to four thousand.

PLACE OF INOCULATION.

In all my previous inoculations, I used to do it on the arm, preferably the left. But in Mysore, a deviation from this practice was first made, and it began with Mr. Chandy who preferred being inoculated on the back. I closely observed the after-effects of it and was convinced that it not only allowed the free use of the arm, but caused no inconvenience either in lying down or sitting up. However, owing to the blind belief of the people, I have not done more than 50 cases on the back. The after-effects in all these cases have been so slight that it has led me to believe that this is better fitted for inoculation than the arm.

PREGNANCY AND INOCULATION.

It is a belief amongst the people that inoculation would be wrought with danger amongst pregnant women, but I have inoculated 22 pregnant women in all stages of pregnancy with no evil effects whatever.

ENLARGED SPLEEN.

I inoculated 5 persons with enlarged spleens due to chronic malaria, with no evil effect, but they appear to have got on better after it.

SHAKING PALSY.

One patient with this complaint got himself inoculated a second time saying that he became slightly better by the first inoculation.

ASTHMA.

One case of asthma had no attack after inoculation, which used to come on regularly every month previously. The patient himself attributed the relief to inoculation.

POVERTY AND REWARD SYSTEM.

When the reward system is in vogue in any place, it is always attended with its accompanying evil of attracting poor persons to present themselves for inoculation more than once. The total that was inoculated by me is 8,765. I refused no less than 447 persons who presented themselves a second time. Had I only encouraged them, with a view to swell the figures, I could have easily done a record figure of over ten thousand. These presented themselves in various ways, such as change of dress, talk, presenting the right arm under the pretext of pain in the left or that he is a left-handed man and would require the use of the right. Some of them used to stand near the Gramophone, and when one of the influencers would ask if he would be inoculated, would say "Oh! I fear. I have never been inoculated. My neighbour told me that it causes pain &c." When however, after some persuasion, he was brought to me after his name having been entered, I would find a big lump in the left arm. When questioned as to the cause of it, he would say, "Fell down, thorn entered, used to be there from birth," and similar concocted excuses. I therefore would say that the Inoculating officer, when the reward system is in vogue, ought to have his eyes wide open not to be cheated by such people, and also must not be tempted to do double and treble inoculations on the same person in order to show a large figure.

* NEURALGIA OR NERVOUS PAIN.

BY

SURGEON MAJOR R. E. WRAFTER, B.M.S.

(Retired) Dehra Dun.

It is not so generally remembered, as it perhaps should be, that although Neuralgia may be purely local as regards the chief symptom, viz., pain, it has very commonly, if not always (excepting when caused mechanically) a constitutional origin. The painful affection we term Neuralgia may attack almost any nerve in the system, although there are some nerves more prone to the malady than others. Referring to the different class of nerves, those lying superficial are more disposed to Neuralgic pain than others more deep-seated. Of the superficial nerves the trifacial, the sciatic and the intercostal are most frequently affected. In this particular it is proposed to refer only to the nerves of the face implicated in Brow-ague or Brow-ache. In addition to the term 'Brow-ague' or 'Brow-ache,' we find the affection frequently referred to, not only by the public but even by professional men and also in systematic treatises of medicine under various or

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different names. Thus some use the expression 'Neuralgia Faciei' to designate not only brow-ague, but also pain occurring in any other part of the face. Others prefer the term 'Tic Douloureux' for any form of pain affecting the sensory nerve of the face, whether it is the supra-orbital acted upon by malarious or other constitutional influences, or whether it is the superior or inferior maxillary, irritated by decayed teeth or diseased gums. 'Hemicrania' is also used when the pain assumes the peculiar character of limitation to one side of the brow and forehead. 'Megrim' again has been applied to pain referred to the internal angle of the orbit and side of the nose. 'Migraine' is another appellation which, borrowed from the French, is much in vogue with some persons for almost any kind of headache, especially common among delicate persons leading a sedentary life, and in nervous hysterical females about the monthly period. Lastly a more purely scientific nomenclature has been attempted as Cephalalgia Muscularis, Cephalalgia Periosteosa, and Cephalalgia Neuralgica; the first being regarded as rheumatic, the second as consequent upon syphilitic infection, and the third as neuralgic or periodic, comprising all the terms abovementioned, viz., Brow-ague or Brow-ache, Tic Douloureux, Hemicrania, Megrim and Migraine. In the official "Nomenclature of Diseases" the heading 'Neuralgia' is divided into (a) Neuralgia Faciei (Facial) with the synonym Tic Douloureux; and (b) Neuralgia Frontis (Brow-ague or Brow-ache) with the synonym Hemicrania. Perhaps the official nomenclature is the best and most simple which has yet been devised; and it would be well if, when speaking or writing on the subject, one set of terms only were used, as the frequently loose manner in which the various appellations are applied often gives rise to doubt as to what particular form of disease is really the object of comment. Neurosis is a word modernly employed to indicate a malady which depends on some perverted nervous influence rather than on merely local changes, and this would appear to express the position of the maladies in question more precisely than the term Neuralgia, which, derived from *neuros*=nerve and *algos*=pain, simply indicates the meaning of nervous pain, or pain of a nerve. The terms Neuralgia Frontis, or Brow-ague, or Brow-ache, or Hemicrania, are generally applied to pain of a very severe character affecting the forehead generally above one eye, and that most frequently the left; but often the pain is more diffused, sometimes over the one side of the head. In typical instances the pain shoots from the spot where the nerve issues through the superciliary foramen, and may sometimes be sharply traced and defined by the finger or even with the point of a pencil. In a few instances, when this occurs, there is a visible red line in the track of the nerve. But in by far the majority

of cases, and especially in old standing or recurring instances of the disease, the pain extends to the adjacent parts, to which the fibrils of the nerves are distributed; not only to the forehead and brow, but also to the upper lid, and sometimes the eye-ball itself participating in the pain. In a minority of instances the pain is more or less defined over half the side of the head. Often it has a superficial character as if in the skin, and at other times it has a deeper-seated character as if in the superciliary ridge of the frontal bone. The pain while it lasts is often most intense and increases in paroxysms, with alternate intervals of comparative ease. The accessions of pain frequently cause the eyes to water and the nose to discharge, while the adjacent arteries throb, and the conjunctiva often becomes blood-shot or ecchymosed. Severe attacks of the above description utterly unfit the patient for any kind of business; but some persons often suffer from a minor degree of the malady, which may be so slight as to scarcely attract notice, or may be simply an inconvenience. The pain may persist during the whole day or during days, but ordinarily attacks of 'brow-ague' or 'brow-ache' usually subside in a few hours. When there is also dyspepsia, the zigzag halo of light spreads, leaving vision free in the centre, and disappearing after a variable time at the circumference of the field of sight. True brow-ache, or Neuralgia Frontis, as above described, is always more prevalent in those localities which we are accustomed to regard as 'malarious', and often is, especially in the first instance, the result of exposure to those influences which we understand by the term 'malarious.' As with other maladies coming under the same denomination, 'brow-ache' is also characterised by periodicity, recurring often at regular intervals, as every day or every second day, with the same pertinacity as an intermittent fever. In a few instances it may be found alternating with a paroxysm of the latter disease, and sometimes it has appeared to occupy the place of the cold, or of the cold and hot stage, disappearing on the formation of a cutaneous exudation. When brow-ague or brow-ache has thus occurred in connection with intermittent fever, there may be a tendency to the former affection long after the latter has disappeared. But although 'brow-ache' may be, and often is caused by what is understood as malarious influences, a very similar pain may arise, and perhaps more frequently does arise, as the result of dyspepsia, or of stomach or bowel or liver derangements of a functional nature, of the existence of which the brow-ache may be almost the only, and certainly is the most prominent sign. There is reason to believe that numerous cases of brow-ague or brow-ache have been treated as malarious with no good effect, when remedies directed to the organs named, with care in diet, would

have been followed by immediate relief. But in India, especially, we are too prone to refer every malady, characterized in the least by periodicity, to malarious influences, and to treat them with so-called antiperiodic medicines; yet the fact is, that most if not all diseases are more or less characterized by periodicity, whether their cause may be so-called malaria or anything else. When a person is seen suffering from brow-ache without any very evident symptoms of stomach, liver, or bowel derangements, without any of the symptoms of dyspepsia or indigestion, with a clean tongue, with bowels acting regularly and naturally, and with every function according to the patient's account in excellent working order, it may be difficult at first to appreciate the fact that a functional error so slight as to be thus overlooked can be the cause of frontal pain. But an attentive examination will seldom fail in discovering something wrong of which the patient has no idea, or which he considers of no consequence. Perhaps the patient may be passing oxalate of lime, or albumen, or sugar in the urine, with the loss of all of which frontal pain is sometimes associated, just as it may be with menorrhagia or with hæmorrhoidal discharges. There may be unknown to the sufferer, white stools, showing the existence of at least some hepatic functional derangement. There may be either diarrhoea or constipation to an abnormal extent, but which the patient in his ignorance regards as natural. There may be acidity of the stomach, and errors of diet which the person considers too trivial to mention. There may be torpidity of, or even accumulation in, the large bowel; a condition more frequent with persons long in India than is generally suspected; also, especially in children, the existence of vicious habits of more than one description, which by their drain upon the system produces nervous debility, and its almost universal accompaniment, nervous pain. There is, however, nothing conclusive in the character of the pain to establish a diagnosis between that arising from so-called malarious influences or that arising from other causes. But as some guide, it may be observed that first attacks especially of malarious brow-ague are more frequently sharply defined, and more localised, than brow-ache from other causes, in which, as a rule, the pain is more diffused over the side of the head. But after repeated attacks from malarious influences the pain is not so well defined as it is generally at first. In addition to malarious influences and to dyspeptic derangements, 'brow-ache' may arise from almost any cause which lowers the vitality of the system. Thus when women have been subject to weakening agencies, such as frequent pregnancies, prolonged lactation, or profuse catamenia, they are additional causes favouring the occurrence of the malady; so much the more certainly if the person has been residing in malarious, hot, and therefore debilitat-

ing climates. The effect of repeated and continued, although small, loss of blood, from any cause, in weakening the nervous system, is well understood. The result of continued heat is none the less certain. In addition to the acknowledged direct depressing effect of heat on the nervous system, there is the degenerated, or it may be said the poisoned condition of the blood arising from a heated and therefore rarified and comparatively less oxygenated atmosphere, combined with often too little exercise, and generally too much food. This also tends to a debilitated condition of the system and a proneness to nervous complaints. There may be in addition overwork in badly ventilated apartments; and especially overwork of the head or brain, which is a fertile source of nervous pain in one or other position about the head. Thus brow-ache or brow-ache may depend, and most frequently does depend, on a combination of the causes previously referred to, partly on one cause and partly on another. It may be due to what is understood as malarious influences, and may be aggravated or re-excited by stomach or liver derangements, or by a low condition of the vital powers; or it may be due to stomach or liver derangements, or dyspepsia, or a low vitality, and be aggravated or re-excited by malarious influences. This, the most common variety of the disease, is most frequently met with in sensitive and nervous people, especially after mental worry or excitement of any kind. Any cause in fact which produces an impression on either the nervous or digestive system of those disposed to the malady will bring on an attack. Food to which the person has been unaccustomed, even although taken in minute quantities, exposure to heat or cold, damp, working at night, anger, excitement of any kind, will cause a paroxysm. In women who have suffered from the disease it frequently returns at or about the monthly periods. Those thus predisposed, often without any very evident cause, may wake up in the morning feeling sick, with the temples throbbing, with hot palms, and more or less unable to eat, move, or converse. The head feels hot, and the application of cold is generally refreshing. But the patient most frequently prefers being left alone, and finds quiet the best mode of obtaining relief. Brow-ache, or indeed neuralgia in general, has been attributed to a 'morbid state of the nerves of sensation,' to 'defective nervous energy,' to 'deficient vitality,' to 'nervous exhaustion'; to 'lowered nerve force,' to 'nervous irritation,' all phrases leaving us as much in the dark as before respecting the true causation of the disease. Attributing the malady to 'malarious influences,' to overwork, to dyspepsia, as in the preceding remarks, is, it must be confessed, scarcely more satisfactory unless it can be shown in what manner these excitants operate; yet, in determining the cause of the malady, there is

but little aid to be found in conditions which in some other diseases are of the greatest assistance. For instance, Pathology gives us little or no evidence. Nerves affected by Neuralgia have been carefully examined after demise, and have been found, to all appearance, healthy. It is true that in some few instances redness or atrophy of a nerve has been described, and there is reason to believe that in a great minority of cases inflammation of the neurilemma may be a reason for the neuralgic pain. But this certainly is not the case in by far the majority of cases. And when redness or other changes of the nerve have been found, they are not more than what may be expected, and are the consequences, rather than the causes, of the existence of the disease. As there is nothing to be gained with reference to the cause from the pathology of the malady, other circumstances, as the class of persons in whom it occurs, the condition under which it occurs, and the localities in which it occurs, may be inquired into with the view of throwing some light on the causation of the malady. As before observed, the dyspeptic, and the debilitated from any reason, are the most likely to suffer from brow-ache. In England it has been noted that neuralgic complaints are comparatively more numerous among the poor and labouring classes—a remark which would be equally applicable to Chronic Rheumatism. Moreover, it has further been observed that the disease is still more prevalent in persons who are not only dyspeptic but who have also been exposed to some debilitating influence, or to what may be understood as 'malarious influences.' As regards the conditions under which it occurs, there is nothing more likely to be followed by an attack than exposure to extremes of heat and cold, or in a hot climate exposure to a very minor degree of cold—such, for instance, as the exposure to the night air in an open carriage or from sleeping in a draught. The next condition under which it most frequently happens is that of minor dyspeptic derangement or excitement, from often a very slight departure from accustomed hours and habits, and this the more certainly if the patient has been also subjected to mental work or mental worry. As regards the localities in which it is most prone to present, these may be in Europe mentioned as low, damp, and malarious places. But in India hill-stations seem to be perhaps more conducive to brow-ache than other localities. This has been remarked by some at Abu and by others at Naini Tal, and at least some other of the Himalayan stations. The explanation of this may perhaps be exposure to a greater degree of cold by persons who have long been habituated to heat, and who are in some way or other rendered prone to the malady from dyspeptic or debilitating conditions. It is well known that nervous pain may be excited by some remote irritation. Examples of this sympathetic

neuralgia are pain in the shoulder during affections of the liver, pain in the glans penis from Calculus, pain in the Testis from irritation of the kidney, pain in the left arm from disease of the heart, pain in some part supplied by the trifacial nerve from a decayed tooth. Pain may also result from mechanical irritation or from pressure, as from the lodgment of a foreign body in some part of the course of a nerve, or from the growth of a tumour or bony exostosis in such position. The last class of cases forming, so far as facial neuralgia is concerned, but a very small number, may be excluded from the consideration of the causation of the malady as it occurs to the great majority of cases. Remote nervous irritation is, we believe, the origin of brow-ague or brow-ache and, in by far the greater number of instances, this irritation is the direct consequence of some abdominal or stomach derangement. We do not believe in any such thing as a local neuralgia unless caused by a mechanical irritation. That local disease causes constitutional suffering is not an observation of recent times; but it appears to have been often forgotten that local disease must first be caused by some constitutional error before it could again react on the constitution. For instance, disease of the knee-joint may be, and indeed often is, the first indication of activity of scrofula in the system, and the local disease which the scrofula excites again reacts on the system. Similarly, secondary symptoms may be the first indication of the syphilitic virus remaining in the system, the syphilitic symptoms soon reacting on and further debilitating the sufferer. Similarly, nervous pain, especially brow-ache may be the first indication of dyspeptic derangements, the pain after a time itself reacting on the system, so that if the pain may be accepted as the disease instead of what it should be regarded as, *viz.*, the sign or symptom of a disease—which fortunately is often functional. If it is asked how stomach or liver derangements affect the distant nerves, and why they affect the supra-orbital nerve in particular, the reply must be, that we do not know, and this answer will be quite as satisfactory as referring to 'reflex action, or to 'lowered nerve force' in explanation. However this may be, the practical fact remains, that brow-ague is most generally, if not always, connected with dyspeptic conditions of which the following observations afford proof. Even severe forms of Facial Neuralgia are often immediately and effectively relieved by Sp. Ammon. Aromat. by Soda Bicarbon. by Seltzer water, or even by a draught of plain cold water. Most authorities on the subject, moreover, mention the great benefit to be achieved by medicines directed to the improvement of the action of the stomach, liver and bowels. Every author also acknowledges the failure of the numerous local remedies which have been recommended. Independent

of some mechanical irritation, in which category may be included morbid growths, and independently of diseased teeth or gums, it is believed that the *fons et origo* of brow-ague, and indeed of Facial Neuralgia generally, is to be sought for primarily in dyspeptic derangements, and secondarily in anything tending to debilitate the nervous system. Further, the immediate exciting cause of the pain may often be exposure to cold. Under such a view, the treatment must consist in especial attention to the digestive organs, with the object of ascertaining what may be amiss; not always an easy matter. In cases where there is evident stomachic or hepatic derangement, the plan of treatment will be clear, but in other instances where dyspeptic manifestations are not so strongly, and sometimes very imperfectly, marked, the remedies will not be so obvious. But the rule, which in the great majority of cases will be followed by success, is to use purgatives moderately. In plethoric habits, and when the constitution has not materially suffered by protracted agony, the aperient plan should be steadily persevered in, and carried to its full extent by daily doses of the medicine chosen. The diet, which should be carefully regulated, should consist of light and nutritious food, and anything which from experience is likely to disagree should be avoided. In such cases also, spirituous and alcoholic liquors should often be absolutely interdicted. The aperient drugs used may be the good old formula of blue pill and Extract Colocynth Comp. with an aperient draught of Sulphate of Soda a few hours afterwards, or when the bowels are evidently costive, may be given, or Podophyllin with Pill. Rhei Co. and Extract of Hyoscyamus may be used when there are symptoms of hepatic derangement. Even when the malady occurs in weak and delicate persons, as for instance in anæmic females in whom the periodical functions of the uterus are disturbed, aperients should still be resorted to, although with more caution and in smaller doses. For such persons the bowels should be regulated by aperients. Although thus laying stress on the necessity of in all cases using aperient medicines, the utility of tonics should not be denied or forgotten. Quinine, Iron, and the vegetable bitters will all be of service, but, as a general rule, only after a course of aperient medicine as above recommended. While a regular periodicity may indicate the use of quinine, the anæmic or chlorotic condition in females will point to the desirability of Iron. But the routine administration of Ferrum or other tonics, as sometimes recommended from the onset, and without especial reference to the state of the digestive organs, is more likely to be followed by failure than by success. That good results which have frequently followed the administration of 20 grain doses of Chloride of Ammonium are probably due to

its action as a laxative and diuretic rather than to any specific effect over the pain is obvious. It may be observed (*en passant*) that Chloride of Ammonium is more beneficial in pains of a Rheumatic character than in the true Neuralgic malady. The same may be said of Bromide of Potassium, which sometimes appears to do good. Colchicum, Sulphur and other alteratives have been used with success sometimes; their action on the bowels probably accounting for the recommendations they have received. When the glimmering or halo of light, mentioned above, occurs, the person should take a stimulant and lie down in a dark room. But immediate relief from the pain is more sought for by the patient, quite as urgently as permanent cure. As before observed, this is sometimes to be obtained by a dose of Sp. Ammonia Aromatic or Carbonate of Ammonia, or Soda Bicarb. If the irritating cause is acidity of the stomach, the use of Antacids is frequently followed by immediate relief. If these remedies are not at hand, a draught of cold water or tea will often be found beneficial. But if there is reason to suppose the stomach is occupied with indigestible food, the use of Antacids, as above stated, will scarcely prove sufficient, and quicker relief will then be experienced from a simple emetic of twenty grains of Ipecacuanha Powder in a cupful of warm water. In first attacks of the disease, which may come on in connection with ague, or after exposure to so-called malarious influences, after a laxative, Quinine may be given every three or four hours. If there are a feeble pulse and fainty feelings, a little Brandy and Water will be desirable. Sometimes hot, but generally cold applications are the most beneficial. If heat is required, dry fomentation with bran or salt may be used. The application of cold may be effected by means of Ice, Ether, Eau-de-Cologne, or evaporating lotions. As it may be sometimes difficult to decide whether the use of hot or cold applications will be best, the sensations of the patient should be consulted, which are generally a safe guide. Chloroform applied to the painful part locally is often useful. Spirits of Camphor (Rubinis), Tincture of Opium, or Tincture of Aconite and Chloroform, in equal parts, may also be used as local anodyne applications. Cocaine solution has been much and successfully used of late. Or a small mustard poultice may be placed on the temples or on the forehead. A rapidly acting blistering fluid has been recommended, and the after-application to the blistered part of a quarter grain of Morphina Hydrochloras. Belladonna is a favourite application with some. Aconitina used as an ointment, in the proportion of two or three grains of the Alkaloid to one ounce of Vaseline, has also been extolled. The subcutaneous injection of one-sixth to one-quarter of a grain of Morphina Hydrochloras, either at the painful part or in some other posi-

tion, will give temporary relief, and is advised for those patients who cannot afford to lie up. Tincture of Gelsemium (the Yellow Jasmine) is also advised by American practitioners, both as an external application and for internal use, in doses of five to fifteen minims. Its action is said to be analogous to that of Aconite. The application of Ether by means of the spray is often considered one of the most certain means of affording relief, although it sometimes fails. Lastly, in some cases, violent bodily exercise has been known to relieve Neuralgic pain of the forehead. The cause of the pain must be sought for in all cases and the patient dealt with accordingly.

Our Contemporaries.

MEDICINE.

Some Significant Urinary Reactions.

W. LANGDON BROWN, M.D., F.R.C.P.—The diagnosis of an obscure condition can sometimes be cleared up by a single urinary test. An unconscious man was admitted to hospital as a case of cerebral hæmorrhage. The house-physician, suspecting uræmia, drew off the urine and found that it was black and yielded a violet colour with ferric chloride. He realised at once that it was a case of carbolic acid poisoning and adopted appropriate treatment with success. On searching the house an empty bottle labelled carbolic acid was found near the spot where the patient was lying. But a single test may mislead. The writer has come across 5 cases in which the discovery of sugar in the urine of a patient admitted unconscious has led to the diagnosis of diabetic coma. Several of these were energetically infused in that belief. But the necropsy revealed intracranial hæmorrhage, usually in the cerebellum, but always far enough back to press on the fourth ventricle. This mistake can be readily avoided, for ferric chloride will always give the claret-coloured reaction with the urine in diabetic coma, due to the diacetic acid, which will not be found in pressure glycosuria. In the following cases the discovery of a somewhat rare substance in the urine threw an entirely fresh light on the case.

(1) *Albumosuria*.—A Jew, aged 50, was admitted to hospital with the history that he had been ailing for about a year. He complained of pains all over and loss of flesh. He was anæmic; he looked ill and in pain, groaning whenever he was moved. No swelling of any bone or joint could be made out, though the ribs were very tender. The chest was emphysematous and there were signs of bronchitis. Nothing else

was made out except that the urine was reported to contain a doubtful trace of albumin with granular and hyaline casts. Measured by Esbach's method the amount of albumin rapidly increased from a trace to 2 per cent. Then an abundant deposit of triple phosphates appeared. Soon after this the writer was asked to see the urine because the abundant precipitate of "albumin," which at first appeared on warming, disappeared on boiling. This roused the suspicion that it was not albumin but albumose, or, as it is more usually called now, proteose, which was present. This substance was first described by Bence Jones in cases of multiple myeloid tumours of the bone. Albumosuria is one of the few signs of disease which can strictly be called pathognomonic. The following tests are sufficient to detect it. After neutralisation the urine is heated. A dense, sticky, white precipitate appears, which vanishes again on further heating to boiling point. While the urine is boiling it is filtered to get rid of any coagulable protein. On adding nitric acid to the cooled filtrate an immediate precipitate appears at the line of junction, *which disappears on warming and reappears on cooling*. The urine in the present case gave all these tests.

The patient grew steadily worse, and hard nodules could be felt firmly attached to several of the ribs, over which the skin was freely movable. These swellings corresponded to the points of maximum tenderness which had been previously observed. Hard movable glands could be felt in the right axilla. In a few days death occurred from broncho-pneumonia. Albumosuria usually occurs in men in later middle life. There is often a period of great weakness and diffuse pains like those of chronic rheumatism before the tumours can be detected. There is also marked tenderness on pressure over certain points. The sudden appearance of the tumours is due to bursting of the growth in the marrow through the compact tissue of the bone. The detection of albumosuria enables a diagnosis to be made before the tumours appear in a case which may have been regarded as one of intractable chronic rheumatism.

The fact that abundant albumosuria is only met with in cases of multiple myeloid tumours of the bones suggests that the albumose originates in the tumours. HUTCHISON and MACLEOD found the albumose in the vertebræ and femur in one case, but were unable to detect it in the blood and organs. Traces of albumose may appear in the urine in many febrile diseases and in chronic suppuration, but this is very different from the large amount met with in this disease, in which a putty-like deposit of albumose may be found. Moreover, the albumose of fevers and suppuration gives a rose-pink colour with a trace of copper sulphate and

excess of caustic soda, while the Bence-Jones albumose gives a violet colour.

Melanuria is diagnostic of the presence of a melanotic sarcoma. It must be remembered that melanin is not usually excreted as such, but as a colourless chromogen. The urine may blacken on standing, as in carboluria, or only when reagents are added. Though oxidising agents will produce the black colour, this is insufficient for diagnostic purposes. The only really trustworthy test is the blackening that follows the addition of a moderately concentrated solution of ferric chloride. This test is not only very delicate, but has the great advantage that the urines which are most likely to be mistaken for melanuric ones are not blackened. The following cases show the great value of this test:—

A woman, aged 53, was seen in consultation. About 3 months before, she began to suffer with pain in the left side. Dulness appeared there with loss of vocal vibrations, breath, and voice-sounds. Friction had never been heard. The signs slowly increased, the pain persisted, and she began to be very short of breath. The temperature had been normal throughout. There was absolute dulness and total absence of respiratory murmur all over the left lung, yet the heart was hardly displaced. The signs did not seem consistent with a pleural effusion, but were suspicious of growth. Searching for evidence of a primary focus, the writer noticed a black mole, about the size of a florin, on the right side of the abdomen. The patient said that it had been there as long as she could remember, but she thought it had grown lately. If this were the primary focus, and the signs were due to melanotic sarcoma of the lung, there should be melanuria. On adding ferric chloride to the urine a distinct black reaction was obtained. It hardly seemed right to leave her in so much distress without exploring the chest, so a fine trocar and cannula were inserted in the seventh interspace in the posterior axillary line. Even on aspiration, however, only about a couple of oz. of blackish fluid were obtained. On examining this microscopically large cells were seen containing distinct grains of black pigment. Death occurred a month later.

A man, aged 57, was admitted to hospital in January 1908, with the history that he had been getting thinner for a few weeks, and had become short of breath. He had been in another hospital 12 months before, where a blood-stained pleural effusion had been found and 5 pints of fluid removed. The right eye had been excised in 1904. There were bulging and deficient respiratory movements of the left chest. There were enlarged veins over the upper chest and over the abdomen, the blood in

which was flowing away from the bulging area. Several small subcutaneous nodules could be felt on the chest and abdomen, and one over the left clavicle. On percussion there was dulness from the second rib out to the axillary fold on the left side, reaching 2 finger-breadths to the right of the sternum, and at the back 1 in. above the angle of the left scapula. The heart's apex was felt in the fourth left space near the sternum. The heart-sounds were faint, but natural. Over the dull area the vocal vibrations were greatly diminished, the breath-sounds were inaudible, and the voice-sounds were muffled.

The bulging of the chest, the enlargement of the veins, and the small nodules pointed to new growth of the lung. The fact that an eye had been removed suggested melanotic sarcoma. This was confirmed by the following steps:—An exploring needle withdrew only a little blood-stained fluid, which rapidly clotted (a suspicious sign); there was melanin in the urine, and one of the nodules excised under a local anæsthetic showed typical melanotic growth. It was then ascertained that the eye was excised for corneal ulcer and hypopyon in November 1903. On section of the eye a large melanotic sarcoma of the choroid was found. Three months later some of the eyelid, orbital contents, and periosteum were removed for recurrence.

The patient steadily got worse; hæmoptysis began, the pain and the bulging of the chest increased, and death occurred 7 weeks after admission. Post mortem an enormous mass of melanotic sarcoma was found filling the left chest, replacing the greater part of the lung tissue, extending across the middle line and perforating the diaphragm. The mediastinal and cervical glands, the ribs, and the xiphoid cartilage, were involved. There were nodules in the mesentery, mesenteric glands, mucous membrane of the ileum, retro-peritoneal glands, bladder and pancreas.

Hæmatoporphyrinuria.—In sulphonal or trional poisoning hæmatoporphyrin may be found in the urine in sufficient quantities to render the urine either port-wine colour or dark brown. It is then a sign of grave import. But hæmatoporphyrinuria may also occur in various morbid conditions of the liver, without serious significance. Occasionally, however, perplexing cases are met with in which hæmatoporphyrinuria may be associated with grave toxic symptoms and yet drugs of the sulphonal class can be excluded. The detection of the hæmatoporphyrin in the urine may explain the true nature of the case. The following case is interesting because of its recurrent character, and because in each attack the symptoms led to a suspicion of intestinal obstruction:—

In June, 1906, a married woman, aged 22, was admitted to the Metropolitan Hospital, under the care of Mr. Harmer, for a severe attack of abdominal pain with vomiting and constipation. The vomited material was deeply bile-stained, but never fæcal. The urine was claret-coloured and contained a few blood-corpuscles, though not nearly enough to account for the colour. Mr. Harmer decided that she was not suffering from intestinal obstruction, so large enemata were ordered and she was placed upon milk diet. There was no improvement until the sixth day, when the vomiting ceased and the bowels became fairly regular. Soon after this she miscarried, and the urine became normal in colour again. In April, 1907, she had another attack, in which the urine again became dark. In Feb. 1908, there was a third attack of abdominal pain, vomiting and constipation, for which she was admitted. She was very thin and there was much pigmentation on the face and abdomen. The tongue was coated with a thick brown fur. The abdomen moved well; there was no rigidity, tenderness or evidence of free fluid. No viscus was palpable. The pain was referred to the umbilicus. A little blood was oozing from the anus, but nothing abnormal could be found on rectal or vaginal examination. The temperature, respirations, pulse and blood-pressure were normal. She passed small quantities of dark brown strongly acid urine. It contained no blood-corpuscles, albumin, sugar, acetone, or diacetic acid. On spectroscope examination two bands were seen, identical in position with those of oxy-hæmoglobin, but unaltered on the addition of reducing agents. This is typical of hæmatoporphyrin when in metallic combination, as it frequently is in the urine. On the addition of strong HCl the urine became purple and showed the ordinary bands of acid hæmatoporphyrin. Both before and after treatment with acid the band of urobilin was very distinct. The patient was still vomiting and had become very drowsy and delirious. She had 3 epileptiform convulsions, each lasting about 5 minutes. The bowels only acted in response to enemata for the first 5 days. The combination of toxic symptoms with hæmatoporphyrinuria led to the suspicion of sulphonal poisoning, so large doses of sodium bicarbonate were given, to which potassium citrate and digitalis were added on account of the scanty urine. A blood examination showed a slight excess of red corpuscles, nearly 6,000,000. The total number of leucocytes were normal, 9,000, but there was a curious alteration in the proportions, 62 per cent. being lymphocytes. She rapidly improved, but the urine still continued to show the bands of hæmatoporphyrin, and constipation remained a troublesome feature of the case. Finally, the administration of a drachm of magnesium sulphate 3 times a day was followed by the disappearance of the bands.

The symptoms corresponded closely with those of sulphonal or trional poisoning. But the patient denied that she took any drugs except those given by her doctor, who stated that he had never ordered anything of that kind. That these drugs were not responsible for her symptoms is supported by the fact that she remained in hospital for a month, during which time the hæmatoporphyrinuria persisted. Similar cases have been recorded. Probably some intestinal intoxication is responsible for this condition, for the following reasons:—

(1) The leading symptoms are those of an intense gastro-intestinal irritation—abdominal pain, vomiting, passage of blood *per rectum*, followed by much prostration, restlessness and delirium. The similarity of the symptoms with those of sulphonal suggest a toxic agent.

(2) Hæmatoporphyrinuria occurs in other diseases in which there is a definite intestinal lesion such as enteric fever.

(3) The pronounced urobilin band shows that one body of putrefactive origin at any rate was being absorbed in excessive amount from the intestines.

(4) Sulphæmoglobinæmia also occurs under conditions of constipation and is much relieved by aperients. Both sulphæmoglobin and hæmatoporphyrin are easily obtained from reduced hæmoglobin but not from oxy-hæmoglobin. This suggests that in both cases some reducing agent is at work, and the intestinal symptoms point to the alimentary canal as its source. Magnesium sulphate has relieved both sulphæmoglobinæmia and hæmatoporphyrinuria.—*The Medical Review*.

Twenty-five Tapeworms in One Patient.

WHEN a patient is suffering from tapeworm the question often arises as to whether he is likely to have more than one worm present at a time. In the majority of cases, it is probable that the tænia will be single, but a few instances have been recorded in which three or four tapeworms have been present at once, and that even a far larger number may be present in some instances is indicated by the following case:—

The patient was a man aged thirty-one, an officer in the Army, who had been stationed at Tonkin upon two separate occasions, first for three years and again for two. During his first stay in those parts he had suffered from severe malaria and dysentery, and moreover, he had contracted tapeworm disease. He used to pass large numbers of segments, and he stated that upon some occasions his motions consisted in nearly half their bulk of fragments and even long pieces of tapeworm, which were always very mobile. Attempts were made to cure him of

his trouble, but unsuccessfully, though for some periods he was free from the passage of segments. Whenever he returned home from the tropics he either ceased to pass tapeworm segments altogether or passed very much smaller numbers of segments.

On his second return to Europe he came under observation for intermittent fever and loss of appetite. He was put upon milk diet and kept in bed, and upon the second day 1½ drachm of oil of male fern were given in capsule form in twelve separate doses, 2 ounces of castor oil being taken half an hour after the last capsule. About two hours later he passed an enormous motion, containing a tangle of tapeworm. By careful lavage the faecal material was separated from the worm; how much of the latter there was in total length it was impossible to tell, because it was so much tangled up, and in separating the portions they became broken; careful examination for the head was made, however, and, to the astonishment of all, it was noticed that there were several heads, so that particular search was made to determine, if possible, how many. Altogether twenty-five were discovered, and it may be that there were more.

One remarkable fact that seems worthy of particular notice is that, notwithstanding the presence of so many tapeworms in one subject, his only symptom for many years was the passage of the segments per anum; in the intervals when treatment which, though unsuccessful, had given temporary cessation in the passage of segments, he was to all intents and purposes quite well.—*The Hospital*.

Note on a Sign of Chronic Malarial Poisoning.

By

W. A. MURRAY, M. B.

Lumding, Assam.

THE sign in question is a dark blush or red colouration on the hypothenar eminence of the hands. It is not a deposit of pigment as it disappears on pressure, quickly reappearing when the pressure is removed. It is continuously present in those cases where it occurs and not only during an attack of fever. It is not developed after one attack of malaria, but only appears in those who have had numerous attacks and presumably numerous infections. It is not apparently caused by other fevers of a prolonged type as it did not occur in the only cases of Malta fever and "Low Fever of European Immigrants" (Rogers) which I have had the opportunity of examining. I cannot find any reference to this condition in any of the books which I have been able to consult, which is my reason for writing this note. I

do not know that the sign is of any great importance, but it is interesting and I am quite at a loss to explain the causation. It is, of course, only observable in Europeans, and Dr. Bentley to whom I mentioned it informed me that he had observed it in at least 75 % of the Europeans in the Duars, all of whom are exposed to frequent malarial infection.—*The Indian Medical Gazette.*

Massage of the Spleen in Latent Malaria.

DR. PENNATO has already recorded three cases of malaria latent for several years in which energetic and prolonged massage of the spleen was sufficient to produce typical attacks of fever. Dr. Fabiani now records a similar case. The patient was a man aged 53, who had recently contracted a malarial infection. The fever appeared to have definitely disappeared under treatment with quinine. On examination the spleen was just palpable at its lower border, and was enlarged in volume, measuring 24 centimetres longitudinally and 10 centimetres transversely. The temperature varied between 36.3° C. in the morning and 37.3° C. in the evening. Repeated and careful examination of the blood for the parasite failed to reveal its presence. But after palpation and compression of the lower margin of the spleen for some minutes the patient was seized about 30 hours later with an attack of fever and profuse sweating, the temperature reaching 39.2° C. Examination of the blood 48 hours after massage of the spleen showed the presence of intra-corpuscular forms of the parasite occupying almost the whole of the corpuscles. The febrile attacks recurred daily to the number of five, following the classic quotidian type, the maximum temperature being 40.3° C., but eventually they yielded to treatment with quinine.—*The Hospital.*

Malaria in Bombay.

A VERY valuable paper was read by Dr. C. A. Bentley, at the December meeting of the *Bombay Medical and Physical Society*, and as this has just come to hand in the *Transactions* (Vol. XIII, No. 4), we may give some extracts for the benefit of our readers.

At the commencement of the present enquiry, Capt. A. G. McKendrick, I.M.S., examined 8,000 children, and was able to map out the areas of intense malaria, but the children are an uncertain quantity and many go away before the fever season.

Since then 15,000 children have been examined, and as a more exact method 3,000 blood films have also been examined. In a majority of places the rate of infection ranged from 10 to 18 or 25 per cent. in most places, but in such parts as the North Fort, Esplanade, Mandvi, Market

and Colaba sections, the rate of infection was found to be as high as 50 per cent. or even 70 per cent.

The previous work of Glen-Liston and McKendrick had established the anopheles *Nyssa Rhynchus Stephensi* as a malaria carrier, and Bentley has confirmed this fact and after an examination of many other mosquitoes he is able to say that "this mosquito is the only one of any real importance in relation to the existence and spread of malaria." It is, however, an uncommon mosquito in Bombay and only forms 1 to 5 per cent. of the total number of mosquitoes present in any locality in that city.

Its breeding places are of two kinds, temporary and permanent. The permanent breeding places are: (1) *Wells*; out of 3,000 wells examined about 1,000 are breeding the *Nyssorhynchus Stephensi*; these wells are usually within the yards or close to thickly crowded tenement houses, and so form "an ideal arrangement for the continued dissemination of malaria."

Cisterns—iron cisterns over latrines, on roofs or within houses are next in importance. Several hundred such infected cisterns have been found in the residential parts of Bombay, the South Fort of Esplanade and Colaba. Many street fountains harboured larvæ of this malaria-carrying mosquito. The small tanks or reservoirs used by *malis* in private gardens are also a great source of danger, and thousands of larvæ of the *Nyssorhynchus* have been found in these small tanks in private gardens.

Besides these, other permanent breeding ground of the *Nyssorhynchus* are the filter beds and reservoirs at Malabar Hill and Bhandarwada and numerous larvæ were also found in shallow pools of water on the sand surface of the filter beds. Then come certain big tanks; while certain other dirty tanks and tanks covered with the rootless duckweed known as *Wolffia Arhiza* were found not to be a source of danger as regards mosquitoes. This weed is said "to have the property of actually destroying larvæ by mechanically preventing them from reaching the water surface to breathe." Pools on the foreshore are a grave source of danger, and even pools with 25 per cent. of salt water were found to harbour larvæ. Temporary breeding places come into existence during the rainy season, being surface pools near building or engineering operations. They appear only to be dangerous when permanent breeding places exist in their vicinity. It is worthy of note that clean and possibly fresh pools of water are far more dangerous than foul and stagnant ponds in which the processes of putrefaction seem to destroy the larvæ of *Nyssorhynchus*. Minor breeding places are many, such as tin-pots, barrels,

hollows, etc., but here again these are dangers only if near a permanent breeding place. The *Nyssorhynchus Stephensi* is a domestic mosquito, and lives and breeds near the dwellings of human beings and readily adapts itself to new or artificial conditions. In this respect it resembles the non-malarial *Myzomyia Rossi*. It usually breeds in close association with man, but it is capable of flying several hundred yards in search of food or a suitable breeding place. The larvæ of *Nyssorhynchus* are very sensitive and at the slightest sign of danger rapidly sink to the bottom of the water; they even disappear if one approaches a pool or makes the slightest movement of the water. They have great powers of withstanding heat; even in cisterns with water at 100° F. in the hot sun, the larvæ will continue to breed and they can live in the water with a large per-centage of sea-water mixed.

We quote from Dr. Bentley's paper as follows:—

"A consideration of the habits of the species of *Anopheles* that we have been discussing—*Nyssorhynchus Stephensi*—makes it at once apparent why this particular mosquito should be enabled to exist and thrive in the midst of large cities like Bombay, Delhi, Amritsar and Madras.

"It is extremely probable that the distribution of this mosquito in Bombay has been increasing in recent years, coincident with the increase of suitable breeding places in the form of iron cisterns, many thousands of which may now exist in the city. Originally it must have been largely restricted to wells, a few small and large tanks, etc., but with the introduction of a pipe water supply and the gradual increased use of water-closets and latrines, each requiring supply cistern, the opportunities for the breeding of the malaria-carrier—*Nyssorhynchus Stephensi*—have increased proportionately. The carelessness that has led to the use of open or improperly closed cisterns inside houses and on the terrace roofs has brought about an extraordinary condition of things. The introduction of a water-carriage system of sewage disposal has generally been looked upon as an advance in sanitation. But in certain parts of Bombay, owing to the careless manner in which cisterns have been erected, one form of insanitation has only been exchanged for another."

The distribution of this mosquito, though widespread, is not uniform, and a curious fact was elicited that this mosquito is often carried to all parts of the city hidden inside the body or hood of *gharis*, victorias, broughams and other vehicles. As many as twenty-five have been found in one vehicle and they are also found in railway carriages.

Dr. Bentley's paper is a very valuable contribution to the study of malaria in a locality and should be of great practical value.—*The Indian Medical Gazette*.

Iodoform and Thyroidism.

BY

A RENDLE SHORT, M.D., B.S., B. SC., F.R.C.S.

Demonstrator of Physiology, University of Bristol; Hon. Surgical Registrar, Bristol Royal Infirmary.

The conclusions which I hope to establish are these:—

1. That iodoform, when absorbed by the system, either from a wound or from the bowel, is excreted into the blood by the thyroid gland as iodothyron, which is the active principle of the colloid of that gland.
2. That an excessive quantity will produce symptoms of acute thyroid intoxication.

Both the above appear to be thoroughly accepted by the modern school of physiologists and pharmacologists. I hope to add a third conclusion, which, as far as I am aware, has not previously been recorded.

3. That in the susceptible person iodoform may precipitate an attack of *chronic* thyroid intoxication, namely, exophthalmic goitre.

It was demonstrated so long ago as 1896, by Baumann, of Freiburg, that the colloid of the thyroid gland contained far more iodine than any other organ in the body. This has been abundantly confirmed by every subsequent observer. The amount varies a good deal in different species. In herbivores it is abundant; in carnivores it is very scanty. This is probably a question of diet. Most vegetables contain iodine, but in the animal body it is present only in the thyroid (with the exception of occasional mere traces in the blood). In young children it is scanty, in some cases falling below our none too accurate means of estimation.

The iodine is an essential constituent of the active principle of the colloid. It has been proved, both by Roos and by Hunt and Seidell (working in the U.S.A. Public Health Laboratory) that the activity of the colloid varies with the per-centage of iodine. The relationship is so definite that leading manufacturing houses now standardise their thyroid extracts for therapeutic purposes by the iodine content, which should not fall below 0.2 per cent. of organic iodine.

Deprivation of iodine is a cause, probably the only cause, of *parenchymatous goitre*. It has been shown in North America that in some districts remote from the sea the vegetation is unusually deficient in iodine, and there was very serious commercial loss amongst sheep farmers by reason of the number of cretin lambs. Many of the sheep and dogs were

goitrous. The introduction of iodiferous salt was completely successful in preventing this. Previously a pure rock salt had been used.

I suggest that the success of Chalmers Watson and of Edmunds in producing goitre in fowls by limiting them to a meat diet was the result of iodine starvation.

The causation of human goitre has long been a problem of great interest. We know that it is in some way related to the drinking water. Goitre follows particular geological formations; in England the carboniferous limestone and upper lias, in Switzerland the molasse. For centuries certain wells on the continent, called Kropfbrunnen, have been known to yield a water that would cause goitre in men and animals, and they have been largely patronised by young men anxious to escape conscription. I have lately discovered a goitre well in Gloucestershire which has caused the disease, to my knowledge, in three or four of the very few persons who have drunk of its waters for any length of time.

In Khokand, Turkestan, a very large proportion of the whole population suffer, and Russian soldiers stationed there rapidly acquire the disease. Changing a water supply will sometimes induce or abate an epidemic of goitre. Thus at Ruppertsweyl, near Aarau, 59 per cent. of the children were goitrous. In 1884 the water supply was changed, and in ten years the percentage of goitrous children had fallen to 11.

It is a noteworthy fact that boiling the water will abolish its remarkable power. This has naturally led to a germ theory of the origin of goitre, but all attempts to find the organism have failed. It is not very probable that a germ should be distributed in particular geological horizons very widely separated from one another. A chemical theory is made much more probable by the analogy of animal experimentation. The water is still active after passing through a Berkefeldt filter. Moreover, in goitre the colloid is extraordinarily deficient in iodine, and in early cases iodides will effect a cure.

Naturally attempts have many times been made to find that the waters of goitre wells are deficient in iodine, but they have usually proved to contain a normal amount; and, indeed, this might have been foreseen. We get most of our iodine from vegetables, not from drinking water. The writer advances the tentative suggestion, shortly to be put to the proof, that the water of goitre wells contains traces of some metal which forms an insoluble, inert compound with iodine in the blood, so, as it were, stealing it from the thyroid gland. Boiling the water precipitates the metal as an insoluble carbonate. It would be

mere guessing to mention names of metals, but either lead or silver, amongst many rarer, might meet the indications. If the chemical theory is correct, the water of Kropfbrunnen should cure exophthalmic goitre in which the iodine content of the gland is excessive.

Why should the thyroid enlarge when the iodine supply is small? Manifestly to obtain a larger blood supply, to make better use of what iodine it can obtain. Similarly one kidney enlarges when the other is removed in order to capture a larger quantity of urea for excretion, and dwellers on mountain-tops increase their red blood corpuscles to make the best possible use of the attenuated supply of oxygen. It is interesting to note that both Halstead and Edmunds have proved that bitches deprived of most of their thyroids have litters of goitrous pups, and that of 2,333 cases of congenital goitre in man collected by Fabre and Thevenot the mother was almost invariably goitrous. The fœtus was supplied with nutriment deficient in iodine, and became goitrous in the attempt to obtain more.

Iodides and iodoform increase the amount of iodine in the thyroid colloid, with a corresponding increase in its physiological activity. This has been proved in man by Oswald, and in dogs by Hunt and Seidell.

Now, the secretion of the thyroid is poured, not into a duct which carries it away, but into the blood stream. When strychnine is given to a patient it is excreted by the kidney, and ceases to exert any physiological effect; but the secretion of the thyroid does exert a physiological effect, and if over-secretion is stimulated by an excessive supply of iodiferous compounds, it is natural to expect symptoms of thyroidism.

The constitutional symptoms of iodoform poisoning are due to acute thyroidism. Iodoform has been recognised to cause trouble in four ways. It may give rise to—

1. Dermatitis, erythema or other rashes.
2. Toxic amblyopia (five cases) or optic atrophy (one case).
3. Haunting with the smell and taste of the drug.
4. Acute thyroid symptoms.

An overdose of thyroid extract causes rapid pulse, head-ache, restlessness, nausea and delirium; in a few cases exophthalmos has been obtained. The picture is thus very like that of Graves's Disease.

I have collected about 100 cases in which iodoform is said to have caused a similar clinical picture—rapid pulse, delirium, head-ache, vomiting, and occasionally fever. The leading pharmacologists now agree in attributing these effects to acute thyroidism. The condition is not easy to diagnose; it is quite unlike the ordinary types of drug

poisoning, and may be confounded with the symptoms of septic absorption. Probably some of the cases were not genuinely iodoform poisoning. When, however, there has been a very rapid pulse with a normal temperature, and the patient has been haunted by the smell and taste of the drug, there can be no room for doubt.

In some cases enormous quantities of the powder had been applied to wounds, one, two or even three ounces at a time. It is remarkable, seeing how frequently iodoform is used as a dressing for chronic tuberculous sinuses in children, that nearly all the recorded cases are in adults.

In susceptible persons iodoform may light up an attack of chronic thyroidism, that is of exophthalmic goitre. One such case has come under my notice.

CASE.—A middle-aged lady was treated for a carbuncle in the perineum, which was dressed by a medical practitioner and a nurse with very ordinary quantities of iodoform. During three weeks about half an ounce of the powder was dusted on, and altogether about 40 inches of narrow iodoform packing gauze were used. The carbuncle healed well under this dressing. For weeks after the cessation of treatment she continually complained that she could smell and taste iodoform, though there was in reality none in the house. She went to the South of England to reconp her strength three or four weeks later, and stayed ten days. On her return she was noticeably ill; there was great emaciation, she was nearly two stone below her normal weight, the pulse was always 120 or more, the thyroid was moderately enlarged, tremor was marked, and she was exceedingly nervous and restless. There was no exophthalmos. I formed the conclusion that it was a case of Graves's Disease, and Dr. Michell Clarke, who kindly saw her in consultation, made the same diagnosis. It is interesting to note that she had had a "nervous breakdown" fifteen years before, which prostrated her for two years, and in which the pulse rate was persistently quick. This may have been a similar attack.

The onset of the present illness was in January, 1909. There has been very slow but decided improvement, and now (April, 1910) she is almost well, but has to lead a very quiet life.

I connect this case with the use of iodoform because—

(a) The trouble followed soon after the application of the drug, although it was not diagnosed for about a month.

(b) She undoubtedly suffered from iodoform poisoning, because the smell haunted her long after the drug was omitted.

(c) Iodoform is proved to cause hyperthyroidism of the acute type, and it is therefore reasonable to suppose that in a susceptible person chronic thyroidism might be produced. It is almost universally recognised that Graves's Disease is due to a chronic hypersecretion of the thyroid. The gland in this disease usually has an abnormally high iodine content.

Practical Deduction.—Iodoform should be used sparingly on absorbing surfaces, especially in adults. It should be avoided if there is any reason to suspect a tendency to exophthalmic goitre. The treatment of early cases of parenchymatous goitre should be directed to altering the drinking water and to introducing iodine. It would appear, since iodoform causes thyroidism more readily than iodides, that iodine ought to be given to such patients in organic combination. In the treatment of exophthalmic goitre iodine starvation should be worth a trial. This could be effected by a meat diet, and possibly by giving the water of a goitre well. It is only right to say that the writer has not had an opportunity of putting the suggestion to the test.—*The Bristol Medico-Chirurgical Journal.*

SURGERY.

Injectations of Hydrogen Peroxide.

SOME years ago Drs. Cionini and Marcantoni, of Pisa, advocated injections of hydrogen peroxide solution for cases of tuberculous peritonitis and pleurisy, and published details of four cases of peritonitis and one case of pleurisy in which the treatment had been carried out successfully. Since then they have persistently employed this method of treatment. Altogether they have now carried out the treatment in 35 cases, including 29 cases of tuberculous peritonitis and six cases of pleurisy, in most of which ordinary medical treatment as well as thoracentesis, and in three cases laparotomy, had previously failed to produce any improvement in the condition. In all these cases a single injection of hydrogen-peroxide solution was sufficient to effect a cure of the disease. In some cases in which the peritoneum and pleura were affected simultaneously, treatment of the peritoneal cavity was followed by an absorption of the pleuritic effusion also. The condition generally cleared up in the course of one to seven weeks after the injection. Care must be taken to ascertain the acid employed to preserve the peroxide of hydrogen. Phosphoric or sulphuric acid are innocuous, but nitric or hydrochloric acid must be avoided. Having punctured the peritoneum, 1½ litre of a physiological solution of sodium chloride heated to 40° C. are injected, 75 cubic centimetres of hydrogen peroxide

being added at the time, so as to make a 5-per-cent. solution. In children about 400 cubic centimetres of the solution should be injected. For the pleura the authors have not exceeded 1 litre. After injection the position of the patient should be changed, so as to bring the solution in contact with all parts of the pleura or peritoneum, and at the end of about six to eight minutes the fluid is evacuated. The patient should be kept absolutely quiet for several hours. A few hours after the injection there is usually a considerable rise of temperature, which gradually subsides in the course of a few days. There is often also a great acceleration of the pulse and general signs of collapse, but these subside in the course of a few hours. Tuberculous masses tend also to disappear after the injections. In the cases of pleurisy the post-operative signs are much less marked.—*The Hospital*.

OBSTETRICS AND GYNÆCOLOGY.

Difficult Diagnosis in a Case of Pregnancy.

BY

E. M. MAGILL, L.S.A., M.C.P. and S., Alta.

The following are the notes of a case of pregnancy which gave considerable trouble in diagnosis on account of the absence of all definite signs of pregnancy in a patient who was a primi-para at the age of 43, when more general disturbance might reasonably be looked for. From six weeks after conception to the completion of the fifth month the patient was under my constant supervision, and was repeatedly examined with the view of determining her pregnant, but only to get inconclusive results.

The past history was uneventful. Mrs. T. had been married five years when I first saw her. She had had no children, but gave a history of a questionable miscarriage at two months three years previously. She had always enjoyed excellent health, and was at the time of consultation a stout, healthy woman.

March 13, 1908.—She consulted me first for amenorrhœa; her last period had begun on January 22 and lasted five days. Before then she had been invariably regular, and was now afraid she was entering upon the change of life. She gave a history of palpitations, hot flushes, indigestion, constipation, nervousness, and pains in the back. She had had no suggestion of morning sickness, and did not think it possible that she could be pregnant. Per vaginam there was no blueing of the parts, the cervix was not softened, the uterus was in good position and not enlarged; the ovaries could not be felt.

March 28.—Cervix questionably softened and the uterus questionably globular, but owing to the thickness and resistance of the abdominal walls this was difficult to make out. No blueing of the parts, no tenseness of the breasts, no morning sickness or any other constitutional disturbance.

April 11.—Uterus enlarged to the size of an orange, but softening does not continue, and no other signs of pregnancy are manifested.

April 26.—Uterus continues to enlarge; no definite signs of pregnancy; general health continues good, though patient is anxious about her condition.

May 14.—A vague, indefinite tumour to be detected to within 1 inch of the umbilicus, very difficult to define owing to the large quantities of fat in the abdominal walls and the rigidity of the patient. No other signs of pregnancy.

June 20.—An examination under an anæsthetic was arranged for, as the patient's general health was beginning to fail rapidly, and she was becoming thin and very nervous. A very indefinite tumour could be made out reaching to the umbilicus and moving slightly with the cervix, which was now soft and patulous. The consistency of the tumour did not in the least suggest the pregnant uterus, being hard, unyielding, and tense, and its surface quite smooth. After repeated manipulations no contractions could be obtained and no foetal movements detected. There was no suggestion of foetal parts, the whole tumour appearing uniform and suggesting a fluid swelling only. Ballotement could not be obtained. The foetal heart was continually listened for, but without success, both by myself and another medical practitioner. The patient has felt no suggestion of quickening, and there is no swelling or pigmentation of the breasts.

June 26.—Patient lost a quantity (about 2 pints) of clear fluid without colour or odour. On examination abdominally, the tumor was found to have decreased to three-quarters of its former size. Per vaginam the external os was very dilated, the internal os not dilated. The tumor was more distinct, but no uterine contractions occurred or foetal movements, and the foetal heart not heard. At 12 noon, however, uterine contractions set in strongly, and continued for 15 hours in spite of the free administration of opium. At 3 A. M., June 27, the pains still were very vigorous, and the patient was in a state of extreme exhaustion, but the internal os was not much affected. Believing the flow of fluid above described to be the liquor amnii, and that the membranes were ruptured, and also that the foetus was dead and abortion inevitable, the rigid

internal os was dilated under chloroform. On intra-uterine examination the membranes were apparently intact, and on rupturing them a definite flow of liquor amnii was obtained. The foetus when removed showed a full six months' development and gave a few signs of life.

The patient made an uneventful recovery, only marked by an excessive formation of milk, which gave some trouble. The difficulty of the case was the complete absence of all signs of pregnancy except amenorrhoea and a growing tumour, which in its tense and fluid consistency suggested much more a rapidly forming ovarian tumour than the pregnant uterus. During the last few weeks also the patient was losing flesh to a large extent, which made the possibility of malignancy come into one's mind. The fluid which came away after examination was apparently external to the amnion, had masked all signs of foetal parts and movements, had deadened the heart sounds, and had apparently caused the perplexing consistency of the tumour. I do not know if an accumulation of fluid between chorion and amnion is at all frequent, but that is the solution suggested to me.—*The Hospital*.

Compression of the Aorta by an Elastic Tube in Post-Partum Hæmorrhage.

B. KRONING.—This method of controlling post-partum hæmorrhage was introduced by MOMBURG ("REVIEW," 1909, p. 410). An India-rubber tube of the thickness of a finger is slowly wound round the patient 2 or 3 times between the iliac crests and the ribs, while traction is made upon it until pulsation of the femoral arteries ceases. The ends of the tube are then secured with a strong clamp.

A woman was admitted in her seventh labour. Previous labours had been normal. The abdominal and uterine walls were thin, so that the foetal parts could be clearly made out. The pains were short and feeble and finally ceased. As the os was almost dilated the membranes were ruptured. Soon afterwards the foetal heart sounds became slow and irregular. The child was therefore rapidly extracted with forceps. The uterus at first contracted well, but an hour later profuse hæmorrhage occurred, about 45 oz. being lost within 10 minutes. The uterus became relaxed. An attempt to express the placenta failed, only a number of clots escaping. The patient became collapsed and fainted. A long India-rubber tube, similar to those usually employed for douches, was wound, while stretched, 4 times round the waist until the femoral pulse disappeared. Hæmorrhage ceased and the uterus contracted. The placenta was then readily expressed. After the tube had remained

5 minutes it was slowly unwound. The uterus became slightly softer, but no further hæmorrhage occurred and the patient rapidly recovered. No anæsthetic was employed.

The application of a tube not only controls the hæmorrhage but gives time for the practitioner thoroughly to disinfect his hands before proceeding to manual removal of the placenta—supposing the necessity for this should arise. But as the uterus reacts to arterial anæmia by intense contraction Momburg's method may in certain cases obviate the necessity.

The method is probably contra-indicated in cases complicated by serious disease of the heart and arteries. For RIMANN and WOLF have shown that the application of the tube is followed by a sudden rise and its removal by an equally sudden fall of blood pressure, but only if the superior mesenteric artery and vein are compressed as well as the aorta and inferior vena cava. This can be avoided with some certainty by placing the patient in Trendelenburg's posture, so that the intestines fall upwards, and applying the tube as near the iliac crests as possible.—*The Medical Review*.

The Diagnosis and Treatment of Hæmorrhage from an Unenlarged Uterus.

BY

VICTOR BONNEY, M.S. M.D., B. Sc., F.R.C.S., M.R.C.P.

The problem of the cause, diagnosis and treatment of abnormal bleeding from a uterus scarcely or not at all enlarged frequently occurs in practice and the importance of its solution is always great and frequently pressing.

Two groups of cases are to be distinguished:—

- (A) Those in which the hæmorrhage is associated with a definite pathological condition;
- (B) Those in which no pathological condition can be recognised.

(A) HÆMORRHAGE ASSOCIATED WITH A DEFINITE PATHOLOGICAL CONDITION.

Under this heading are placed—(i) Small submucous myomata or adenomyomata; (ii) Carcinoma either of the body or cervix; (iii) Uterine fibrosis; (iv) Endometritis; (v) Mucous polypi.

Myomata:—A small myoma bulging into or actually polypoid in the uterine cavity may give rise to very severe monthly hæmorrhage though the uterine enlargement is but slight. The characteristic hæmorrhage due to a "fibroid" is always periodic. Continuous loss is very unusual and should always awaken suspicion of co-existent malignant disease.

Adenomyomata:—This rarely attains a large size and can only be certainly diagnosed from a frank myoma by the aid of the microscope. It gives rise to periodic loss of blood like a submucous myoma.

Carcinoma:—Carcinoma of the cervix is of course easily diagnosed, but there is a type occurring in the small senile uterus where its recognition is not so easy. In such cases no vaginal cervix exists, its place being taken by a small puckered depression in the vaginal vault from which blood readily oozes. A uterus the seat of corporeal carcinoma is usually enlarged, but there is a diffuse ulcerative type chiefly met with in elderly women in which the organ is atrophic and small. The hæmorrhage in such cases is irregular and slight and may be mistaken for the slight blood loss of senile endometritis.

Uterine Fibrosis:—In this condition the walls of the uterus are the seat of a profound degeneration whereby the normal muscle fibres have been replaced by fibrous tissue, usually held to be the result of a long-continued metritis, secondary or primary, and analogous to the diffuse cirrhoses of liver or kidney. A uterus thus enlarged bleeds profusely, the loss at first being periodic, but later more or less continuous.

Endometritis:—It is the fashion to ascribe to "endometritis" any uterine hæmorrhage not readily explainable on other grounds. Many of the cases diagnosed to be endometritis never show inflammatory changes when the specimens of endometrium removed by the curette are subjected to microscopical examination. The effect of acute endometritis on menstrual bleeding varies; when sufficiently severe to cause coagulative necrosis of the mucous membrane or to thrombose the endometrial capillaries the "period" is suppressed altogether; but if the inflammation be less destructive than this the amount of blood lost is excessive and often long-continued. Chronic endometritis always—exaggerates the monthly loss.

Mucous polypi:—A mucous polypus is usually an exaggerated local expression of a general endometrial hypertrophy of inflammatory origin. The symptoms are at first those of chronic endometritis and the bleeding is menstrual in type; later, however, as the polypus extrudes the bleeding is continuous.

(B) HÆMORRHAGE UNASSOCIATED WITH RECOGNISABLE
PATHOLOGICAL CHANGES IN THE UTERUS.

It is impossible to classify the anomalous case of uterine hæmorrhage, but a few types may be indicated, such as the menorrhagia of puberty and the menopause, post-lactional menstrual hæmorrhage, and

certain apparently causeless forms of intermittent menorrhagia and metrorrhagia, suddenly intercalated in the course of the normal period. The ignorance of causes of these forms of hæmorrhage is due to want of accurate knowledge of the physiology of normal menstruation.

When a patient presents herself complaining of uterine hæmorrhage and yet with a uterus unenlarged, the following questions have to be answered:—

- (1) Can a diagnosis be made?
- (2) If a diagnosis cannot be made, should the drug treatment be tried before operative interference?
- (3) If a diagnosis can be made, what is the proper treatment?

(1) CAN A DIAGNOSIS BE MADE?

Three things have to be taken into account in endeavouring to make a diagnosis:—the result of the examination; the age of the patient; and the type of the bleeding.

The examination:—Carcinoma of the cervix is recognised without much difficulty, the finding of a polypus distending the cervical canal immediately removes all uncertainty, whilst in certain cases of carcinoma of the body of the uterus, the external os may be so dilated as to allow of the finger feeling the soft friable growth in the uterus. On the other hand, there is a type of cervical cancer, described already, occurring in old women in which very little is to be made out by vaginal examination, the only suspicious feature of which is the blood oozing from a small puckered depression. Polypi in the upper part of the uterine cavity is undetectable without artificial dilatation of the os. Carcinoma of the body only produces cervical dilatation when it has spread as far as the internal os. Vaginal examination, therefore, in many cases reveals nothing.

Age of the patient:—If the patient is below 30 years carcinoma of the body is to be entirely excluded and of the cervix very nearly so, whilst myomata and adenomyomata are most uncommon. Between 30 and 35 the likelihood of myomata and adenomyomata are increased whilst carcinoma of the cervix is still relatively uncommon. Between 35 and 45 the liability to carcinoma of the cervix and myomata rises to its maximum, and uterine fibrosis and the more established types of endometrial changes are all more commonly met with. Between 45 and 50, the liability to fibrotic metritis, endometritis and mucous polypi diminishes, but carcinoma of the corpus now begins to vie with that of the cervix and with myomata as the probable cause of the bleeding. After 50 years hæmorrhage from uterus is probably due to carcinoma of the cervix or body.

The type of the bleeding:—

2. (a) If the abnormal bleeding is regularly menstrual, carcinoma is excluded. Regular excessive menstrual losses suggest a definite structural alteration of the uterus, such as myomata, fibrotic metritis, endometritis or mucous polypus of the corpus.

(b) If the abnormal bleeding is menstrual but occurs irregularly with excessive loss, some functional disturbance of the organ is strongly suggested.

(c) Abrupt and free loss after a period suggests some sudden change in the endometrium, probably inflammatory. The bleeding due to new growths does not begin in this fulminant manner.

(d) Continuous and abrupt bleeding after a period which was itself excessive is very characteristic of an extruding polypus.

(e) Continuous bleeding beginning insidiously scanty at first and steadily increasing strongly suggest malignant disease.

(2) If a diagnosis cannot be made should the drug treatment be tried before operative interference?

This depends upon the age of the patient and the character of the bleeding.

Where youth, menstrual incidence and irregularity of occurrence, all point towards a functional cause for the hæmorrhage, drugs should always be given a long trial first. On the other hand advanced years and continuous loss form an urgent danger signal and no time should be lost in exploring the uterus under an anæsthetic and ascertaining the cause of bleeding. In general, it may be said when the bleeding is due to functional cause drugs must be tried, but where organic lesion is suspected an examination and uterine exploration should be advised.

(3) A diagnosis being made, what is the treatment?

(a) Drug treatment—

Of the various drugs used for controlling uterine bleeding Ergot stands foremost. It is most efficacious in acid solution and combined with strychnine.

R.—Extr. Ergot liq. m. xxx.
Liqr. Strychnine m. v.
Acid Hydrochloric dil m. x.

It has been shown that long-continued administration of Ergot throws an increased strain on the heart muscle, by producing arterial contraction. As the hearts of patients who have suffered from excessive bleeding for a long time are often degenerate from the consequent anæmia it may be held as axiomatic this rule:—"Given a condition in which Ergot, if prescribed, will have to be taken over a prolonged period, and the use of the drug at all is contra-indicated."

Hydrastis and Hæmamelis are sometimes useful adjuncts to the action of Ergot or they may be successful when the latter has failed. These must be given like Ergot in acid solution and combined with strychnine.

Cannabin and Hydrastinine in combination with Ergotin sometimes give satisfactory results.

Styptol and Stypticin are undoubtedly useful drugs, especially in the anomalous forms of bleeding. They both alleviate some forms of pelvic pain.

In the treatment of uterine myomata, the exciting cause must be removed when giving rise to symptoms, but drugs will have to be employed only when the patient declines operation. In all other cases of organic disease of the uterus, operative measures and not drugs are indicated.

(b) As regards electrical treatment it will suffice to say that the modern zinc-mercury-ionisation treatment is a very definite way of directly applying powerful drugs to a diseased area.

(c) Operative treatment—

(i) *Curettage* is a very successful operation where the cause of the bleeding is a diseased endometrium, but if the deeper parts of the uterine wall are at fault (metritis), or the hæmorrhage is due to excessive size of the menstrual area (myomata), or where no organic disease exists (functional hæmorrhage) curettage is an altogether irrational proceeding. Curettage is likely to be successful where definite endometrial hypertrophy, inflammatory or otherwise, is proved to exist. Where the curette removes nothing and scrapes hard and rough on the uterine wall, the probability of the operation doing any good is slight. In such cases diffuse fibrotic metritis is probably present. Curettage is contra-indicated in cases of functional hæmorrhage. For myomata it is a bad proceeding, not only a failure but associated with definite risk, both immediate and remote.

(ii) *Vaginal Myomectomy and the removal of Polypi*:—Where a polypus is found presenting at the external os its removal is easy, and where a Mucous polypus has been removed the endometrium must be curetted. Small tumours contained within the cavity of the uterus cannot be diagnosed until the cervix has been dilated. Polypi (myomatous or mucous) may be evulsed or scraped away, whilst sessile submucous myomata may be enucleated with ease in some cases. When this fails hysterectomy is indicated.

(iii) *Hysterectomy*:—The removal of an unenlarged uterus, except for malignant diseases, was considered to be a proceeding likely to incur the

censure or unfavourable criticism of a certain section of the more conservative gynaecologists, and it was no uncommon thing to meet a patient who had swallowed literally gallons of drugs and had been curetted half-a-dozen times. Finally when she has become fearfully exsanguinated and had spent much time and money, hysterectomy was with diffidence advised. We now know that the loss of uterus is followed by no ill-effects to the patient and is not associated with so-called "menopausal" symptoms, nor with anything beyond great improvement to the health and relief from a monthly recurring annoyance. The treatment of carcinoma is obviously extirpation whenever possible.

Extract from the "Practitioner."

By. R. R. KALMADI, L. M. & S. MADRAS.

THERAPEUTICS.

Treatment of Tinea Tonsurans and Scabies

AN EXTRACT FROM A PAPER READ BY

L. ERASMUS ELLIS, M. D.

(Before the Leicester Medical Society.)

I. TINEA TONSURANS (RINGWORM OF THE HEAD.)

This is a bugbear of general practice. The great multiplicity of remedies recommended for Tinea Tonsurans indicate the unsatisfactory state of the treatment of this condition at present. The ease with which some forms of tinea of the scalp are cured causes the general public, and in some instances even the inexperienced medical practitioner, to become impatient at the long-drawn-out course of treatment that is necessary in some of the more deep-seated varieties. One can, however, account for this obstinacy when one thinks how the disease has been slowly establishing itself for a lengthy period, perhaps, unperceived or at least untreated, beneath a thick crust of epithelial debris that has formed a protection for it and enabled it to work its dire effects uninterrupted until the fungus having penetrated down into the hair follicles, the hair having been broken off and the site of the entrance of the fungus partially or wholly occluded, the latter, usually the small-spored variety, finds itself as it were in a "bottle," secure from the approach of remedies from without, and inaccessible to remedies from within, and it thus defies the treatment that is applied for an indefinite period. In such cases the campaign is well begun by clearing the ground of this epithelial crust. This can generally be effected by a Salicylic Ointment combined perhaps with some mercurial or coal tar preparation. It is advisable to cut the hair of the whole scalp very short and so reveal all areas of infection. Having thus cleared the way for the entrance of the remedial agent, one has to attack the vexed question of which remedy

to choose. Perhaps each practitioner should consult his own favourite authority, and the remedy recommended by him *properly applied* will probably, with patience, effect an ultimate cure.

Epilation is a very useful adjunct for performing this clearance of the ground and if adopted should be carried out a little beyond the affected area. The application of a spirit and ether lotion will, at this stage, also assist greatly by helping to clear away epithelial debris and fat, but it might be mentioned that washing with water is to be strongly condemned, as tending to spread the disease.

Of remedies to be used, MALCOLM MORRIS recommends a strong solution of Iodine for recent cases and Chrysarobin for more chronic ones. It might incidentally be pointed out that the scalp is generally far more tolerant of caustic applications than the rest of the skin. DR. ELLIS finds that a strong Sulphur Ointment (3i to 3i), combined with a mercurial answers very well, and likewise Carbolic acid and Salicylic acid used together in an ointment form a useful application. While these remedies will usually cure the majority of the diseased areas, a few will sometimes prove resistant to even these strong applications and for such croton oil is recommended by several authorities. The croton oil will set up a severe reaction which is usually a hopeful condition as regards the cure of Tinea, as the severe inflammation nearly always kills the fungus and does not often produce baldness, though a permanent condition of alopecia is occasionally brought about.

The treatment of Tinea Tonsurans by means of carefully graduated exposures to the X-rays is now well established, the average length of time required to effect a complete cure is about three months. The action of this remedy is in the form of epilation and not as a parasiticide. Though excellent in its results, it has, however, its drawbacks in general practice, and is not always available.

II. SCABIES (ITCH.)

In treating scabies B-Naphthol Ointment is preferred to the more usual sulphur ointment. It is less irritating and does not so strongly proclaim its identity by the smell attached to the patient who is under treatment. The ointment should be perseveringly rubbed on to the affected parts and be combined with daily hot baths and scrubbing with ordinary yellow soap, while the whole of the clothing should be disinfected. An original way of supplementing the ordinary application of the ointment is by what EDDOWS calls his "medicated scratch." The patient is instructed upon going to bed to fill the spaces between his finger nails with ointment. Then when the irritation, consequent upon

the body becoming warm in bed, causes him to scratch himself, the ointment secreted beneath the nails is applied to the exact spot where it is required and so the patient is induced to continue the treatment of his pathological condition, even into the hours of his sleep.

Extract from "The Practitioner."

By K. R. KALMADI, L. M. & S. MADRAS.

The Treatment of Diabetes Mellitus.

RUDISCH discusses the treatment of this disease from the point of view of (1) the administration of fats; (2) the presence of acetone bodies in the urine, and their relation to strict protein diet; (3) the quantitative limitation of the proteins and fat, and (4) the administration of drugs. Under the first heading he advises a moderation in the amount of fat usually given to diabetics. Vegetable fats can be substituted for animal fats with great advantage. Olive oil is the best form, and is specially well borne in young subjects. It should be given in gradually increasing doses, from one teaspoonful to two tablespoonfuls or more after each meal. On the second point he remarks that as the presence of acetone bodies in the urine is usually found whenever in healthy persons all carbohydrate food is suddenly withheld, the same holds good in the majority of cases of diabetes, specially those of mild type, and he does not advocate the administration of carbohydrate food on the appearance of acetone bodies. In patients who having been under observation for some time and kept on a strict carbohydrate free diet, develop acetone bodies, it is necessary to allow a small amount of carbohydrates with a corresponding amount of protein until the diacetic acid diminishes or disappears. We may thus be able to prevent the onset of coma. Under the third heading, he considers that the rule commonly laid down that a healthy person requires 35 to 40 calories per kilo is not necessary to follow, and that on a diet equivalent to only 25 calories per kilo, patients can not only maintain their weight, but increase it. On the fourth point, *viz.*, the administration of drugs, he refers specially to three—sodium bicarbonate, opium and atropin. The use of sodium bicarbonate is usually limited to the control of acidosis. But when given with a carbo-hydrate-free diet in doses of 30-40 grams per diem, it exerts a distinct inhibiting influence on the excretion of sugar. That the drug has some influence on the pancreas, the organs most concerned in diabetes in man, is further shown by the experiments of PAWLOW on dogs and man recently by the beneficial effect of sodium carbonate combined with strict carbo-hydrate-free diet in the healing of pancreatic fistulæ in man. Opium, morphine and codein are most popular drugs in the treatment of this disease, but their action is uncertain; in

some cases there is no response at all to their administration; in others as soon as the drug is stopped the glycosuria returns, and much larger doses are then required in order to control the sugar excretion again. The cases in which the neurotic element is most pronounced, are those which respond most to opium treatment. The author, however, lays great stress on the value of atropin in controlling sugar excretion. It has the advantage of being well borne in large doses, if given cautiously, and in gradually increasing amounts. With atropin, the glycosuria disappears much more rapidly than with a carbo-hydrate-free diet alone. When, with the cautious increase in carbo-hydrates in patients whose urine has become sugar-free, sugar again appears, it is often possible to suppress the sugar excretion solely by atropin without reducing the carbo-hydrates. The sulphate is the form commonly used, but Merck's methy. bromide of atropin has certain advantages. It is much less toxic than the sulphate, and therefore safer for patients who are not under daily supervision. Its action is not so striking as that of the sulphate. An initial dose of $\frac{2}{15}$ of a grain three times a day can be safely used in an adult, and can be increased by $\frac{1}{5}$ at a time till $\frac{3}{15}$ are given three times a day. With the sulphate the initial dose in adults is $\frac{1}{150}$ grain thrice daily, increased slowly in some cases up to $\frac{1}{20}$ grain thrice daily. When toxic effects, such as rapid pulse, flushed cheeks, dry throat and dilated pupils appear, the drug should be either stopped altogether or the dose not increased. Later it was always possible to resume the administration, and then to give larger doses than before without toxic symptoms appearing.—*The Australasian Medical Gazette.*

Salicylic Treatment of Pneumonia.

Acetyl-salicylic acid (aspirin) in pneumonia seems to be strongly recommended by the experience of Dr. J. L. ANDREWS (*Amer. Med.*, Nov., 1909). According to his description the regular effect of the drug is striking. About a half hour after the dose the patients begin to perspire and continue for about two hours. The drug is given by the author in 10 grain doses 4 times a day, so that the skin is moist or drenched, as the case may be, most of the time. Coincident with the sweating, the patient slips off into a quiet sleep, the fever falls, and the pulse improves in quality. The respiration also becomes slower. The patients still continue to have their rise of temperature each day, and there may be a high fever much of the time, but they are always comfortable. The author has not seen any sign of heart depression from the drug, and complications, although by no means eliminated, are usually mild in form. In fact he feels, although he does not actually make the

claim, that the course of the disease is shortened by the use of the drug.—*Medical Review of Reviews*.

Iron: Therapeutic uses of.

The hæmoglobin-regenerating action of iron is best availed of by giving insoluble preparations, inasmuch as the researches of DUMONT have served to indicate that iron is absorbed by phagocytes, and those of FLEIG, that insoluble iron provokes this process of phagocytosis more actively than the soluble preparations. A second effect of the administration of iron is to stimulate oxidation. Iron also directly excites the glands of the stomach, and has a distinct antiseptic action in the intestinal tract. Hence preparations of iron should not be given in cases of hyperchlorhydria, but rather in cases of chloro anæmia associated with intestinal fermentation. Iron is comparatively useless in parasitic anæmias, in leukæmias, and in anæmias of renal origin, in which often there is present only a kind of relative anæmia due to retention of water in the tissues and blood. Its use may be dangerous in anæmias associated with gastric symptoms, in which an examination of the stools for occult blood to exclude the presence of ulceration should always be made before prescribing it, and in anæmias of tuberculous origin, in which it may activate the morbid process by increasing oxidation. Certain cases of chlorosis in association with tuberculosis are benefited, but in the average case of pulmonary tuberculosis it only serves to aggravate the condition.

In order to obtain its full beneficial action, iron, when administered, should be continued for from six weeks to two months. In anæmia due to auto-intoxication from the gastro-intestinal tract, with the passage of hæmolytic substances into the blood, as occurs frequently in chlorosis, the return of the gastric functions to normal should be favored by proper dietetic measures and regular bowel movements secured by means of laxatives, before the use of iron is begun. The following pill may then be prescribed: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); powdered aloes, 0.02 gram ($\frac{1}{2}$ grain); extract of rhubarb, 0.05 gram ($\frac{1}{4}$ grain); two pills before meals. In anæmia due to lead, iron is useful in association with the iodides. The protiodide of iron is valuable in this condition. In anæmia following acute infections such as acute articular rheumatism, pneumonia, and septic states, the physician prescribing iron should be on the watch for signs of tuberculosis. In malarial anæmia, JACCOUD recommends the use of the tartrate of iron and potassium in combination with extract of cinchona in large doses. Post-hæmorrhagic anæmias should not always be treated with iron,

since the administration of this drug may provoke hæmoptysis or hæmatemesis. It may be given, however, after hæmorrhage resulting from trauma, when the flow of blood has been checked, and in cases of metrorrhagia due itself to changes in the blood. Excessive menstrual discharge in young girls may frequently be arrested by the following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{1}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{8}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{40}$ grain); two pills before meals. In anæmias of the pernicious type, the use of arsenic and bone-marrow is indicated. The pseudo-leukæmic anæmias occurring in children are probably often due to syphilis and should receive appropriate treatment. If this prove not to be the case, the diet should be corrected, and iron prescribed, either as the protoxalate, in the dose of 0.05 to 0.10 gram ($\frac{1}{4}$ to $1\frac{1}{2}$ grains) daily, or as the cacodylate (0.05 gram). In cases where the digestive tract was in poor condition, the administration of these salts by subcutaneous injection gave good results.—*Monthly Cyclopaedia and Medical Bulletin*.

OPHTHALMOLOGY.

Presenile Syphilitic Cataract.

EDWARD STIEREN believes that less mention is made of syphilitic disease of the crystalline lens than of any other tissue in the human body, the great majority of authors entirely ignoring syphilis as an ætiological factor in the causation of early cataract, while the few who do mention it are rather vague in their reference to it. He reports three cases, one in which cataract developed secondary to a syphilitic inflammation of the anterior segment of the eye and the other two in which cloudiness of the lens substance occurred, with well marked peripheral cortical striæ, in eyes with pronounced arteriosclerosis in the retinal vessels. As these two cases were both under forty years of age and the one gave a clear history of syphilis while the other had other symptoms pointing toward a syphilitic infection, the author feels justified in attributing the arteriosclerosis to a syphilitic endarteritis. Antisyphilitic treatment, in one case, cleared up the cloudiness of the lens and improved the vision, although the cortical striæ remained. This trouble did not progress any, however. The author uses, in these cases, a combination of tincture of iodine and spirits of nitrous æther as follows: Tincture iodi m. xv., spiritus ætheris nitrosi 3 i. Thirty drops to be taken three or four times daily.—*The American Journal of Ophthalmology*.

Blindness from Heroin in the Nostrum "Habitina."

EDWARD STIEREN reports a case of amblyopia in an intelligent negro woman who was taking "Habitina" as a cure for the morphine habit. The nostrum contained 16 grains of morphin and 8 grains of heroin to the ounce. Beginning with 10 drops three times daily she increased it until she was taking six or eight tea-spoonfuls daily, equivalent to 2 grains of morphin and 1 grain of heroin six or eight times daily. She came complaining of dimness of vision and pain in the head, shoulders and abdomen. Stieren describes his findings thus: The ophthalmic picture she presented was striking and characteristic of blindness; the pupils were widely dilated and reacted sluggishly to light and accommodation; either eye diverged markedly on covering. The subjective symptoms were diplopia and failure to recognize objects when looking directly at them; a large central scotoma could be demonstrated in each eye, with peripheral vision apparently but little diminished. The ophthalmoscope revealed a slight hyperæmia of the discs, edges blurred, and decided fullness of the retinal veins. Under eliminative and supporting treatment she improved rapidly and was discharged in about one month with vision 6/8 in either eye.—*The American Journal of Ophthalmology*.

DERMATOLOGY.

A Nicotine Eruption.

PROF. NACKC.—A joiner, aged 22, was admitted to an asylum on Feb. 5, 1908, in a maniacal condition, which dated from Jan. 12. He was said to have had a similar but less acute attack 2 years previously. This attack of insanity lasted 12 months, and ended in almost complete recovery.

About 6 weeks after the onset, on the night of Feb. 20, he drank a basin of coffee to which 7 to 10 gm. (about 2½ dr.) of common chewing tobacco had been added by another patient, whose coffee he was in the habit of stealing. Next morning he vomited repeatedly. A general slightly raised scarlatiniform eruption appeared, especially on the back and buttocks. It was accompanied by severe itching. The patient was isolated as the eruption suggested scarlet fever. The temperature was 99°. On the following day the eruption was still more extensive, especially on the face, but was almost absent on the legs, forearms, hands, feet, and flexor surfaces of the joints. The face was puffy. The urine was normal. The conjunctivæ were hyperæmic. The pupils were contracted and reacted sluggishly to light and accommodation. There were nausea

and severe headache. The pulse was 120 to 130 and somewhat irregular. The temperature was normal. On the third day eruption began to fade on the face. On the shoulders it assumed the form of dark bluish red rings enclosing normal skin. The lower lids formed bluish oedematous bags. There was almost complete anorexia and moderate headache. The pulse was still 120 and not quite regular. During the day the patient became much more sensible than before. On the fourth day the eruption faded still further, the bags under the eyes disappeared and appetite was returning. The pulse was 112. The pupils were of normal size and reacted normally. As recovery from the tobacco poisoning proceeded the maniacal condition returned. On Feb. 24 the eruption had practically disappeared and the pulse was 76. The eruption was not followed by desquamation.

The occurrence of such extensive erythema in nicotine poisoning is probably unique. LEWIN has reported a case in which the usual symptoms of nicotine poisoning were accompanied by erythematous patches of the face and neck with pruritus over the neck, sternum, and between the scapulæ.—*The Medical Review*.

OTOLOGY.

Foreign Body in the Ear.

An excellent method of removing foreign bodies from the ear or nose is that of suction. A piece of rubber tubing is attached firmly to the nozzle of a brass syringe. This is inserted into the meatus and brought in contact with the foreign body; by withdrawing the piston a vacuum is created and the body will be drawn into or against the free end of the tubing, and so may be got out. It is advantageous to moisten the end of tubing with glycerine.—*The P. M.*

Syringing the Ear.

THE dangers incurred in syringing out the middle ear in the presence of a chronic discharge are very great indeed. All watery fluids encourage bacterial growth and enhance what is the main object to prevent and avoid. Syringing is always liable to have the effect of driving sepsis further afield. I never syringe on any pretext, and entirely disapprove of syringing the ear in any way whatever in the presence of a discharge. Wiping out the ear with twisted wool is all that is necessary and advisable to entrust to the patient.—*The Hospital*.

Cases and Comments.

A Case of Protracted Labour with Prolapse of the Cord.

BY

M. J. VIRARAGHAVALU NAIDU.

Sub-Assistant Surgeon, Civil Bourdillon Hospital, Mercara, Coorg.

On the 23rd June 1910, at 7-30 P. M. I was called to attend a case of labour in the town by the Matron of the local Hospital.

The patient was a young girl of 18 years of age, wife of a tailor. She was lying on a mat catching hold of a support, and straining with all her might. Her face was pale and anxious. I was told by the midwife that she was in pains since that morning, and the membranes ruptured an hour previously with prolapse of the cord and escape of liquor amnii.

PREVIOUS HISTORY:—

This is the second pregnancy. In the first pregnancy, too, she had difficult labour, which occurred 1½ year, ago. She was confined by a native midwife and gave birth to a son which lived only 4 months.

PRESENT HISTORY:—

She had completed the full term of pregnancy. Pain commenced early morning that day and continued till evening with no signs of confinement. The patient was getting exhausted, pains were violent and continuous and not intermittent. Bowels were free; bladder emptied twice. Since the patient was bad, I had to proceed with the examination.

EXAMINATION:—

- i. *Inspection*:—Abdomen was fully distended.
- ii. *Abdominal Palpation*:—

On making the fundal grip, I could feel a hard and fixed tumour, a little to the right of the middle line, probably the breech. On the left side, the tumour was soft, due to collection of liquor amnii. On making the pelvic grip, the presenting part was felt filling the pelvic brim.

- iii. *Vaginal Examination*:—

I found the loop of the cord 4 inches long protruding outside the vulva. On making examination with two fingers of my left hand, after taking the necessary antiseptic precautions, I felt the loop of the cord in the vagina. On introducing my fingers into the os uteri, the os was found fully dilated with rupture of the membrane the presenting part

was the vertex which was fixed posterior fontanelle could nicely be felt. The cord was not pulsating.

Auscultation:—

No foetal heart sounds could be heard. Uterine souffle was distinctly audible.

Since, I thought, that Trendelenberg position or any attempt to push in, the cord would do no good to the patient, I had to extract the child by means of forceps to bring on immediate delivery.

OPERATION UNDER CHLOROFORM:—

i. *Preparation for Operation*.—The patient was put on a small cot. Since she had a weak pulse, I had to give her a hypodermic injection of strychnine. (1/100 gr.). After anaesthetising her she was put in the cross-bed position. Her external genitals were washed with lysol lotion (1 in 150).

ii. *Operation*:—After sterilizing the forceps with lysol lotion, (the only lotion I had) I applied the forceps, which I got easily locked and began to extract the child. Although I struggled for some time, I was not able to bring down the head into the perineum.

Since I was certain that the child was dead, there was no other means but to extract the child by performing craniotomy to save the mother. I perforated the skull, evacuated as much of the brain as possible and compressed the skull with cranioclast by which I could not extract the child. So I had to apply forceps again and delivered the child (female) with the greatest difficulty, causing no rupture of the perineum.

Placenta easily came out after a few minutes, and bleeding much. By this time the patient recovered from the effects of chloroform. I gave her a hypodermic injection of ergotoxin (1/100 gr.) and an ounce of brandy with water to drink.

The midwife washed the externals with hot water and gave a lysol (1 in 150) vaginal and uterine douche. The uterus was firmly held for half an hour and then a binder was applied. The douche was given since there was every likelihood of patient getting septic infection.

23rd night.—The patient slept well that night. She was given small quantities of brandy and milk every 2 hours. Bowels little loose; urine passed freely.

24th June.—The patient had a temperature of 100° in the axilla. Pulse was fairly good. She was put on milk, soup, bread and egg diet and given the following mixture:—

Quinine Sulph. 3 ss.
 Acid Sulph. Dil 3 i.
 Liq. Opii Sed 3 ss.
 Ext. Ergot Liq. 3 iss.
 Aqua Chloroform 3 vi.

Ft. Mist. (Sig.) 3; T. D. and another lysol douche was given.

25th June.—The patient had a temperature of 99°. The same mixture and diet continued. Bowels became regular.

26th June.—The patient is progressing well.

The case is most interesting to note that although so much force was used during extraction of the child, with prolapse of the cord, there was neither premature detachment of the placenta, nor post-partum hæmorrhage.

I think, in all probability, the prolapse of the cord was due to the abnormal length of the cord, which I forgot to measure.

THE ANTISEPTIC.

JULY, 1910.

Man against Disease Germs.

IN our breathless struggle to earn the world's good name, and the world's goods in particular, we are tending to neglect the more immediate and self-centred struggle for a happy existence freed from premature decay and disease. Between birth and death man has three chief stages of life—the period of growth, of rising vitality and vigour, that makes him dare everything regardless of many consequences; the middle period of life when growth begins to cease and decay is commencing; and the final period of decline when the worn-out tissues of the body gradually give way, and finally stop functioning at the moment of dissolution. Ordinarily, disease attacks man, mostly, during the period of decline when the defensive mechanism of the body is failing in its efficiency, and during the very early period of growth when the defensive mechanism has not yet sufficiently fully formed to ensure self-protection. The remaining period maintains a comparative immunity from the commoner diseases, unless, of course, accident or indiscretion has damaged some important organs of the body. Now, wherein lies the need for a defensive mechanism? Of what nature is it? And above all, who are our invisible enemies?

Even such a simple machine as a bicycle, although properly fitted-up and made of the best and tested materials, has a tool-bag attached to it, to meet emergencies that are certain to happen so long as the machine is in use. It therefore requires no special argument to show the necessity of a self-protecting and self-adjusting arrangement in such a highly complicated living machinery as the human body, even when all the organs that have to act in harmony are perfectly healthy. The mechanism of defence is practically the same for all the organs in the body. Each cell in every normal tissue is endowed with a certain amount of resisting power towards evil influences; and when that cell is over-powered, assistance is close at hand, in the shape of the white corpuscles that are always "on the beat," as it were, in the circulating blood which maintains an unfailing and perpetual means of communication from any

one part of the body to another. Under circumstances where even these corpuscles on the spot cannot successfully deal with a powerful enemy, special arrangements are available whereby millions and millions more of the corpuscular "soldiers" are, at a short notice, taken to the seat of war; and, simultaneously, there is in some special organs in the body, a vigorous recruiting of fresh corpuscles going on side by side with the mobilisation of reinforcements for the front. Against whom are these elaborate preparations of war directed?

While the individual, as a whole, is by instinct or habit able to withstand evil intrusions from outside, the ultimate cells of the body have to be rescued from damage or destruction from certain minute bodies called "Bacteria" that escape the natural vision of the individual, being rendered visible only under very high magnifying powers of a microscope. These bodies are of very many different kinds; and most of them are responsible for the different kinds of diseases with which they are associated. One form produces the common "colds"; another, cholera; a third, dysentery; another, consumption; and so on.

When we are aware of the existence of enemies, our safety chiefly lies in keeping them at a harmless distance if that be possible; and when we have actually to fight them, we face them with weapons that we know are injurious to their existence. The disease-germs (Bacteria, etc), are the enemies of man's existence, and they are ever on the alert to pounce upon any part of his body that is weakened for the time being, causing disease. These germs may be found in the dust-laden air that man breathes, in the contaminated water that he drinks, in the exposed food-materials that he swallows, and in great profusion in the natural excretions that he discharges. He carries them about on his skin surfaces, even in perfect health; and he harbours them also in the cavities of his body that communicate with the external air. So long as our vitality is superior to that of these our enemies that we harbour in such a dangerous vicinity, we are safe from them; but, once our vitality is lowered, we are easily vulnerable by them, unless we have taken care to weaken their power to do evil, by the action of certain agents that are known to us as detrimental to their existence. We carry about the cause of our death within us or next to us! It is, therefore, of paramount importance for us to find out what are the kinds of Bacteria that produce the special forms of diseases where they are likely to be found, what the conditions are that sharpen their activities, and what, those that prejudice their activities or abolish them. To enable the lay public to carry out intelligently the instructions regarding Preventive Medicine, an elementary knowledge of the life-history of these

disease-germs is, we need scarcely say, the surest guarantee. Such knowledge would not be too advanced for the school-boy who receives a good deal of more advanced ideas of other subjects some of which may very profitably give place to subjects such as these. And a few practical lessons demonstrating the destruction of living organisms by these germs would undoubtedly be remembered by future generations all their lives. The chief thing to be convinced of is the existence of a microscopic world that, if left in ignorance and neglect, would cause disease and misery. To those of us who have formed settled habits of life, an anti-bacterial mode of life would probably be inconvenient, if not intolerable. But the lot of future generations may a great deal be improved if at the very outset of their independent existence they are made cognisant of the real enemy of health. When a youth leaves school, he would of course be highly thankful for a knowledge of the disease-germs, that tells him how to avoid cholera and consumption, and how to save his home and family from the miseries of disease. This knowledge will form a habit of anti-bacterial cleanliness that is the secret of health and long life.

But, while we are so enthusiastic about imparting an elementary knowledge of the disease-germs to the ordinary school-boy, to enable him to avoid germ infection, have we taken care to see that all those members of the medical profession that go about healing the sick, are provided with that indispensable knowledge—the knowledge of the very *causation* of disease? In our opinion, we cannot condemn too strongly the "healing art" of those who never suspect the real extraneous origin of disease, never trouble themselves to seek the immediate source of it, and never even feel inclined to lend an ear to results that have been established and can be easily demonstrated. They are living and practising their art in complete oblivion of the existence of an unseen world, of a world that multiplies by the million in the minute, of a world that is constantly in and around the very tissues of the subjects they are called upon to treat—the world that by themselves manufacture almost all the diseases human flesh is heir to!

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Original Articles.

* MENTAL DEFICIENCY IN INFANCY AND CHILDHOOD.

BY

H. EMLYN JONES, M.R.C.S. (ENG.), L.R.C.P. (LOND).
*Fellow of the Hunterian Society, Medical Inspector of Schools,
Essex-County Council.*

(Continued from page 364, Vol. VII, No. 7, "The Antiseptic").

II.

THE GENERAL SYMPTOMS AND DIAGNOSIS.



HE recognition of Mental Deficiency in Infancy is oftentimes far from easy, but there are certain points, apart from those facial peculiarities which characterise the Mongol and the Cretin, which should always suggest imbecility or feeble-mindedness.

The most important are :—

(1) *Failure to acquire certain powers at the normal age.*—Normal Infants can usually hold the head up quite steadily at 4 months, and, if in good health, cannot do this at the age of 7 or 8 months ; there are strong reasons for suspecting deficiency.

The healthy child should sit up without any support at 9 months, to learn to walk at 18 months, and distinguish its mother or nurse at 6 months. Provided there is no physical disease, *e.g.*, Rickets, nor any defect of sight, the failure to acquire these functions by about 3-6 months after the normal period at which they would be performed by a healthy infant, should suggest, to say the least, some degree of mental impairment.

Attempts at speech are generally made soon after the child has attained 1 year, at least reasonable attempts at single words, but though

* Specially contributed to *The Antiseptic*.

there is wide variation in speech development in infants, delayed failure for several months longer, especially if combined with failure to acquire one or more of the abovementioned functions, is still more strongly suspicious.

The eyes of normal children can usually be directed toward a bright light or object at a very early age, if only momentary, and the failure to obtain this at 3-4 months, is also suspicious.

Most children will grasp at an object, even if unable to hold it, at 4-5 months, and can usually accurately grasp and hold such object with the fingers at 6 months. Mental deficiency is very probable in a child who fails to grasp its feeding bottle by the time such infant has reached the age of 9 months.

(ii) *Frequent crying and screaming*, or the tendency to make sudden shrill cries or meaningless sounds during the first year of life.

The reasonable attempts at speech must be clearly distinguished from these sudden cries and sounds. They are often accompanied by an aimless grin or smile, and are quite meaningless in character, whereas the former always express some idea or emotion, such as pleasure or pain. Crying or screaming are common enough in the child of normal mental attainments, but these frequent purposeless attacks of screaming, provided no disease is present, and especially if combined with any of the other signs, should always put one on the alert to carefully watch the infant, or if asked, to give a guarded prognosis as to its mental power.

(iii) *Abnormal placidity*.—This of course, is the exact opposite of the latter state, and many a mother has wrongly mistaken this abnormal placidity for "goodness," and awoke later to the fact that the real cause was "dulness" or "imbecility."

In those children of school age, we have many additional signs:—

(i) *Failure to acquire other functions at the proper age*.—These are more especially connected with education, and answer to certain educational tests.

BINET and SIMON¹ have suggested the following tests as those to which a normal child should answer at the corresponding age:—

3 years of age.—Show nose, eyes, mouth.

Tell things on a picture.

Repeat two figures.

Give the name of the family.

4 years of age.—Give the sex.

Name a key, knife and half penny.

Repeat three figures.

Compare two lengths.

5 years of age.—Compare two boxes of different weights.

Copy a square.

Count four single pennies.

Repeat a phrase of ten syllables.

6 years of age.—Repeat a phrase of sixteen syllables.

Compare the aesthetic qualities of two portraits.

Define familiar objects by their uses only.

Carry out three simultaneous orders.

Give their age in years.

Distinguish morning and afternoon.

7 years of age.—Count the fingers correctly.

Copy a written phrase.

Copy a diamond-shaped lozenge.

Repeat five numbers.

Describe an engraving.

Name four common coins.

8 years of age.—Read a short paragraph and remember two facts in it.

Name four colours shown.

Count from 20 to 0 in reverse.

Compare two objects from memory.

Write a phrase from dictation.

9 years of age.—Give the exact date.

Name the days of the week.

Remember six facts from short paragraph previously read.

Arrange five different weights.

Give the change for 4 pence from 20 pence.

Give definitions of familiar objects beyond mere uses.

(ii) *The tendency to rhythmic movements*.—These movements are very often seen in imbeciles, but also in the feeble-minded during the early days of childhood. The child will sit rocking its body from side to side for hours together, or turning its head from one side to another, and occasionally at the same time making a cooing sound. Though rhythmic movements of a similar nature are frequently seen in children of normal mental power, they are seldom so pronounced or so prolonged in the latter, but when present are always suggestive of a nervous temperament.

(iii) *Expression*.—Many are mouth-breathers, with or without nasal obstruction, giving the well-known vacant expression. The peculiar

diagnostic facial characteristics of the Cretin and the Mongol, I will describe in a later paper.

(iv) *The physical stigmata of degeneracy.*—DR. FRANCIS WARNER¹ has laid great stress on the presence of any of these stigmata, and though the presence of one is of but little help in diagnosis, the presence of two or more is very suggestive of deficient mental attainments. The chief are the following :—

(a) *Abnormal shapes of the palate.*—The most common deviations from the normal are the keel-shaped or saddle-shaped palate, resembling a saddle viewed from below, or the high, arched, narrow palate. Though these are often observed among normal children, they are far more common among the mentally weak. Practically all my own cases have one or other of these conditions.

Often the height of the palatal arch is increased at the expense of the nasal cavity, and in extreme cases, the alveolar processes of the upper jaw are advanced, and the protruding teeth, which are generally decayed, are left uncovered by the upper lip. The front teeth are usually deformed, crowded together and irregularly placed. The molars usually have abnormal spaces between them, sometimes being "honeycombed," indicating a perversion of nutrition which is present all over the body. The teeth are late in appearing and often decay early, and it is extremely rare to see an idiot or mentally defective child of 10 without carious teeth and stumps and general oral sepsis.

Occasionally the palate is cleft, but the causes producing the latter, which is *not* hereditary, have probably no effect in the production of mental deficiency or idiocy. Curiously enough this saddle-shaped palate, although so frequently present in degenerates, is seldom met with in microcephalics or Cretinoid idiots, and is often wanting in those cases of deficiency arising from causes operating after birth.

(b) *Tongue.*—Occasionally the tongue is too large for the mouth, and frequently it is corrugated or fissured. This is a special feature in the Mongolian type of idiocy.

(c) *Ear.*—Abnormal shapes of the external auricle, accessory auricles, asymmetry of the pinnæ, or even atresia of the external auditory canal may be present.

(d) *Eyes.*—Epicanthus, obliquity of the orbital fissures, persistence of the pupillary membrane, opacity of the media, defects of vision and astigmatism are all common.

(e) *Throat.*—Bifid uvula, enlarged tonsils, adenoids or other forms of nasal obstruction are often present. The large majority of mentally deficient children are habitual mouth-breathers.



1. A defective child, showing typical expression, open-mouth, obliquity of orbital fissures, &c.



2. A Mongolian Imbecile with characteristic expression.



3. A mentally deficient Infant with malformed Pinnae.

(f) *Head*.—This may be bossed, ridged, asymmetrical, microcephalic (2" or more under the normal for the age), hydrocephalic, etc.

(v) *The position of the hands when held out straight in front of the child*.—In the normal child the hands should usually be held out quite straight with the thumbs on the same level as the fingers, but in the mentally defective child or child of nervous temperament, the fingers are usually turned upwards, so that the dorsum of the hand forms a concavity, and the thumbs are generally flexed and bent inwards toward the palm. In addition, in these children there is usually some degree of paresis in the attempt at this, so that in these, as in "choreic" patients, the arms are at a lower level than when a similar position is attempted by a child of normal mental power, without deficiency or excess of nervous energy.

(vi) *General*.—The circulation is often feeble, and the temperature a degree or two lower than normal, so that the extremities are cold and the patient frequently subjected to chilblains. Sensibility is deficient, and an idiot or mentally deficient child will often allow sores to be produced on the foot from an ill-fitting boot without the slightest complaint. These sores, when produced, are most difficult to heal. Often the heart is small and weak, and congenital abnormalities, especially a patent foramen ovale, are far from uncommon. The unpleasant odour exhaled from the Defectives sometimes comes from the secretion of the skin, but more often from carious teeth and oral sepsis.

These children are often of the strumous or tuberculous type, sometimes associated with Rickets; consequently signs of bronchitis are common in the lungs and later on definite tuberculosis makes itself manifest.

The hand is moist and clammy. There is often (especially in Mongolians) a curving inwards of the tip of the little finger, and sometimes of the little toe, with shortening of the second phalanx and displacement of the terminal phalanx. In imbeciles the ball of the thumb is often flat, owing to the poor development of the muscles; the skin of the palm is soft, and the fingers long, thin and trembling.

Slavering in these children is extremely common, and though generally due to pure negligence in swallowing saliva, may be due to irritation through the chorda tympani nerve.

Rumination³ sometimes occurs, and hence the gulping of food in these patients should not be so much resisted as in the normal child.

These then are the chief points for diagnosis, but it must not be forgotten that occasionally one finds a bad case of feeble-mindedness or even idocy with no physical stigmata whatever. They may be strong

in body, have excellent teeth, well-formed heads and no deformities. Such cases, however, are the exception.

References.—

1. L'Année Psychologique—Binet and Simon, 1909.
2. The Nervous System of the Child—Warner, 1906
3. "Nyt Tidsskrift for Abnormvæsenet"—Friis 1899.

(To be continued.)

*TREATMENT OF INFANTILISM.

BY

JOGENDER LAL CHANDRA, L. M. S.

Late Prof. of Anatomy, College of Physicians and Surgeons, Calcutta.

Infantilism or persistent infant-like condition of a child is due to any cause such as sporadic cretinism, rickets, deficient or defective pancreatic secretion, inherited syphilis and tubercle.

Sporadic cretinism is due to congenital absence or want of function of thyroid gland.

Classical symptoms are:—

(i) Stunted growth of the body; the growth of the trunks and limbs is not keeping pace with that of the head, hands and feet, *i. e.*, there is a great want of due proportion between the various parts of the body.

(ii) Imperfect development of the intellect.

(iii) Characteristic curvature of the lumbar spine "Lordosis"—and thereby increasing the projection of the abdomen.

Treatment:—

Thyroid extract gr. iii to begin with twice a day:

How does the thyroid gland wield its wonderful influence upon the metabolism of the body, is still shrouded with obscurity.

According to OSLER'S "Practice" 7th edition, 1909, p. 771, the thyroid extract is the only curative remedy at our command.

The fact that the child loses in weight under its administration need not cause serious alarm

DR. SAJOUS ("Internal Secretions", 2nd edition, 1908) also advises thyroid extract.

One grain of desiccated extract of the thyroid gland of the sheep daily for three days, and the increase of the dose by one-half to one grain after every three-day period, watching the child carefully after each period for any untoward symptoms, until the child will get six grains daily in divided doses.

Stop the medicine if untoward effects such as violent headache and feeble action of the heart are observed.

Specially contributed to *The Antiseptic*.

Keep the bowels open and the skin active. Be sure to tone up the general condition, and watch the temperature, which in these cases is almost always sub-normal. Take great care that the patient does not catch cold to which the child is particularly liable.

RYMAN recommends in addition Calcium Iodide which has two-fold benefit: *viz* :—

(i) it gives iodine in an easily assimilated form.

(ii) it supplies calcium in which the organism is deficient.

Rickets—is a disease of infancy affecting the nutrition and development of the whole of the growing organism more specially those of bones and teeth.

Preventive treatment:—

Rickets is, properly speaking, a diet disease. It cannot be removed until general poverty is stamped out; feed the infant with healthy human milk or ass's milk which closely resembles human milk in composition.

Failing these measures prescribe the following:—

Cow's milk one part, water four parts, add little barley; boil for 15 minutes; during the course of boiling the barley particles come in contact with milk corpuscles and mechanically break them into finer corpuscles like that of human milk.

If the child cannot digest cow's milk, add raw meat, juice and cream to it. In early months of infancy farinaceous food should be withheld.

When the child is six months over malted food may be added to the milk.

When the child is one year old bread and boiled milk should be the staple diet. When the child is between 12-18 months, bread, butter, yolk of egg, little fish and vegetables may be given in addition to milk.

When two years of age milk pudding, jelly, cake may be added.

Fresh air and sunshine are absolutely indispensable. Dress the child properly with warm clothing.

*Curative treatment:—*Treatment is essentially hygienic and chiefly dietetic:

Dietetic:—increase the nutritive value of diet—

(i) of fat by the addition of cream or,

Cod liver oil

(ii) of Proteid „ Raw meat juice,

(iii) of Carbohydrate „ Malted food.

N. B.—Sauatogen is an excellent adjuvant. Raw meat juice should be prepared by soaking finely minced beef in an equal quantity of cold

water for half an hour and expressing all juice through fine muslin by twisting it.

Dose a teaspoonful: (ALLBUTT'S *System of Medicine*, Vol. iii, p. 137).
Medicinal :—

1. Cod-liver Oil in the form of Stearn's Wine of Cod-liver Oil.
2. Calcium glycerophosph effervescence (BISHOP'S). Dose 10 grains in water twice a day.

Phosphorus has the reputation of consolidating new formation of bone. The writer prefers to administer phosphorus in organic form, as present in Sanatogen, Plasmon, Yolk of Egg, &c.

Massage the body with mustard oil.

Bathe him with tepid water.

Clothing should be according to the season.

Fresh air, light and sunshine are, so to speak, the elixir of life.

Deficient or defective pancreatic secretion :—

Classical symptoms are :—

1. Growth and bodily development of the child have been arrested. A child of 8 or 9 years of age would appear like an infant of 4 or 5 years old.

2. Chronic diarrhoea.

3. Genitals quite infantile.

The rational plan of treatment would be—

- (i) to supply artificially pancreatic extracts ;
- (ii) to give food to the starving organs.

(a) Iron Somatose

(b) Calcium Glycerophosph.

(c) Raw meat juice.

(d) Fruit juice.

Of pancreatic preparations Savoy and MOORE'S Pancreatic Emulsion, or Benger's Liq. Pancreaticus acts admirably well: dose being a teaspoonful twice a day with milk, to be given 2 hours after food, with a little Bicarbonate of Soda to prevent its being rendered inactive by the acid stomach contents.

How to prepare milk?

Mix a pint of milk with 5 ounces of water, heat to 140°F. and then add Liq. Pancreaticus (Benger's) 2 fl. drachms; or Zymine (Fairchild's Ext. Pancreaticus) gr. v and Sodium Carbonate gr. xx; leave the mixture at the ordinary temperature of room for 3 hours or if kept at about 135°F. for half an hour; then heat for a moment to boiling point.

DR. YOUNG in the *Clinical Studies*, p. 157, Vol. I, conducts a series of experiments to show that the pancreatic secretion is deficient or perhaps completely arrested.

His research was conducted on three different lines.

In the *first* place there is a considerable quantity of undigested fat in the stool, diarrhoea being due to defective pancreatic secretion.

Pancreatic extract was administered with the result that the amount of undigested fat in the stools became very much less, in fact practically disappeared.

In the *second* place, the patient was placed on milk diet. The caseinogen is broken up in the stomach in paranuclein and a proteid; paranuclein contains 4 per cent. of phosphorus and is insoluble, but when it comes in contact with the pancreatic juice, it is split into paranucleic acid and an albumose which is soluble. This is the source of phosphorus (Phosphoric Acid) in the urine.

DR. YOUNG found that the amount of phosphoric acid in the urine in this case, when the patient was taking a milk diet, was extremely small; but that during the administration of the glycerine extract of pancreas, the amount of phosphoric acid in the urine underwent a very marked and rapid increase.

In the *third* place PROF. BYRAM BRAMWELL administered test capsules containing iodoform surrounded by a glutoid substance which is insoluble in the gastric and intestinal secretions, but is soluble in the pancreatic secretion.

Soon after the iodoform is set free by the solution of the capsule, iodine in the form of iodides and iodates may be demonstrated in the saliva by testing with chloroform and nitric acid; the nitric acid sets free the iodine which gives a pink colour to the chloroform. The test is a beautiful means of demonstrating—

(i) the length of time that food (*i.e.*, the capsule) remains in the stomach;

(ii) whether the pancreatic secretion is active or not.

If no iodine reaction is obtained after the administration of the capsule it may be concluded either that the capsule has not passed from the stomach or that the pancreatic secretion is in abeyance. In this case the capsule was found undigested in the stool.

This is a proof that pancreatic secretion is defective.

The next step in the investigation was to administer a capsule along with food and then two hours afterwards to give a dose (2 drachms of pancreatic extract.)

Iodine can now be detected an hour after the pancreatic extract had been administered.

These three different experiments show that pancreatic secretion is either very defective or completely in abeyance.

Inherited Syphilis:—The child has an aged look; for particulars *vide* my article on Syphilis.

Tubercular Diathesis:—

The child is usually thin-built and is of sharp intellect. There are other signs and symptoms of tuberculosis: *vide* my article on *Tuberculosis*.

* FATTY DEGENERATION.

BY

SURGEON-MAJOR R. E. WRAFTER, B. M. S. (RETIRED).

Obesity is a very troublesome complaint, especially when it becomes excessive, or when the waist girth exceeds that of the chest circumference; it causes embarrassed respiration, languid circulation, and sometimes disturbance of the digestive organs. Some people, as they grow old, seem to wither and dry up; others again, women more than men, present a far different appearance, and grow very stout and short-winded, when there is a tendency to impairment of the powers, both of the muscles and of the blood-vessels. With most elderly persons of phlegmatic temperament, it is often accompanied by a peculiar appearance of the eyes, designated the *arcus senilis*, and known by an opaque white circle round the margin of the cornea, where it joins the sclerotic tunic. In many cases there is no difficulty of breathing felt when at rest, but it comes on with any sudden exertion as going up stairs. General obesity extending over the whole body and limbs may not give rise to any immediate inconvenience, but when it has accumulated in remote parts, and interferes with the functions of particular organs, its evil influence becomes apparent and constitutes disease which may be considered a serious malady.

The causes are, probably, hereditary tendency, excessive use of all farinaceous vegetable and saccharine articles of food, consumption of large quantities of fluid for drink, indolent habits, and too much sleep; also the want of a due amount of exercise at that period of life when the collection of a little adipose material in the system is natural.

Treatment:—When persons are growing obese, the first great principles of prevention are less food and more exercise. The individual who, becoming stout, desires to permanently reduce his or her state should consume less food and take more exercise. If the person leaves off carbonaceous food, of which sugar may be taken as the type, the

* Specially contributed to *The Antiseptic*.

sufferer will probably achieve the purpose more quickly. The second great principle of prevention is the avoidance of those articles of food which are known, when taken in excess, to produce obesity, as fat of meat, bacon, fat pork, white bread, cheese, butter, thick soups, salmon, stews, preserves, beer, sweet wine, spirits. Articles containing much starch, as potatoes, tapioca, rice, arrowroot, sago and sugar, should be interdicted, or at least taken only in moderation. For sugar, Saccharin may be substituted, as, although possessing more sweetening power than sugar, it is not a food. Brown bread, toast, biscuits, rusks, lean of any kind of meat, fowl, or game, green vegetables, as cauliflower, asparagus, and lettuce, celery, fruit, and light wines should form the diet. Even if the regimen as above sketched cannot be strictly adhered to, attention to its leading principles will tend to prevent accumulation of adipose tissue and also to lessen the amount present in the system. The change from one diet to another should be made gradually. The sudden withdrawal of accustomed articles of food is unwise, and it is better to lessen in a general manner the fatty portions of the diet than to go to extremes at once. It should be remembered that there is no royal road both to be come thin and to keep so. No system of dietary will probably effect this end. But a spare amount of food and moderate exercise, and to keep the bowels regular, may do so. Among the proprietary drugs proposed for growing thin, the following have been recommended, *viz.*, Antipon, a proprietary absorbent remedy which professes to destroy superfluous fat of the body. Anti-fat Pills for obesity, by Kemp and Co., one taken three times a day, will have a good effect, and Dalloff Tea "the only cure for corpulency" Dalloff Tea Co. Dept.

Our Contemporaries.

MEDICINE.

Poisoning by Santonin.

DR. NEER, of Vinita, Okla., reports in the *Critic and Guide* a case of fatal santonin poisoning in a girl two years old. The child had been given a teaspoonful of a "patent" vermifuge twice daily for three days. There was no indication of the amount of santonin in a given quantity of the fluid in the bottle, but the dose recommended was a teaspoonful for a child of two or over, and half that quantity for a younger child. A few hours after the last dose had been administered the child was seized with generalised convulsions, which continued at intervals until death. There was no fever, no evidence of digestive disturbance, and no meningitis. The child never regained consciousness. The pupils

were dilated, there was some sweating, and between spasms the muscles were completely relaxed. The bowels were emptied by an enema and a purge was given. The convulsions were controlled for an hour or two by bromides, chloral and paregoric. Towards the last the pulse became very weak, the respiration stertorous, and the temperature slightly raised. It was impossible to make an examination of the urine before death, which occurred on the second day. The author remarks that such a case illustrates forcibly the danger of indiscriminate administration of patent vermifuge mixtures containing santonin for the treatment of worms which are often not present at all. Santonin should be given with caution to debilitated children, as a dose of 2 grains has been known to be fatal to a feeble child five years of age.—*The Hospital*.

Death some days after Chloroform.

AUBERTIN mentions the fact that some cases, apparently quite free from any hepatic or renal mischief, die between the second and fifth days after surgical interference under chloroform, generally without jaundice, and that in such cases degenerative and necrotic lesion of the liver are discovered *post mortem*. These hepatic lesions have been attributed to appendicitis, to the abuse of antiseptics, etc., but it is probable that the chloroform always plays an important part in their production, and it is nearly certain that in many cases it is the only cause. AUBERTIN, in fact, has succeeded in producing, in healthy animals, delayed death after a single production of chloroform anaesthesia, and has found in such circumstances two varieties of lesion; visceral changes affecting chiefly the liver, and general congestive and hæmorrhagic phenomena. It may be that the hæmorrhagic changes are partly caused by hepatic insufficiency; but in any case it is interesting to see that chloroform anaesthesia can by itself cause delayed death from hepatic insufficiency, accompanied, not by jaundice, but by hæmorrhagic symptoms.—*The Canadian Practitioner and Review*.

Ether as an Antidote to Cocaine Poisoning.

The author has frequently had occasion to treat cases of cocaine poisoning, the result of injection of cocaine for dental purposes. Strychnine and morphine he found too slow in action to be depended upon in urgent cases. Ether inhalations, however, stimulate the vasomotor system and have a powerful tonic effect upon the heart muscles, acting almost instantly. The anaesthetic should be administered only to the degree of mild surgical narcosis, or, at times, even less than this. A mask should be employed and the ether given by the drop method. This is important, as, given by the old method, the ether would only

add to the danger of asphyxia by excluding air from the venous blood-engorged lungs. The same treatment is useful also for stovaine poisoning.—*The Canadian Practitioner and Review*.

Conditions which Simulate Dyspepsia.

By ROBERT HUTCHISON, M. D., F.R.C.P.

Two of the chief symptoms of gastric disorder, pain and vomiting, are deceptive. In the abdomen the organs are closely packed together and many have a common nerve supply. Therefore it is not surprising that pain originating in one organ should be referred to another. Vomiting, again, may arise in many different diseases and disorders, owing to the widespread peripheral connexions of the vomiting centre.

THE VOMITING OF PREGNANCY.

A fairly common cause of vomiting which is frequently misdiagnosed is the vomiting of pregnancy. An anæmic young woman had gastric pain and vomiting with some hæmatemesis. The symptoms were so urgent as to make it necessary to call in a surgeon. On examining the abdomen he could make out the top of the uterus coming up above the brim. (Three months' pregnancy)

URÆMIC AND PHTHISICAL VOMITING.

These conditions are classed together, as they present certain points of resemblance and are both apt to be regarded as primary gastric disease. Secondary gastric catarrh is probably present. The gastric symptoms may be so prominent that the primary disease is overlooked. In a case of nephritis gastro-enterostomy was performed under the belief that the symptoms were due to a gastric ulcer.

Uræmic vomiting may be the first symptom of chronic interstitial nephritis. With it there are, as in all cases of gastritis, anorexia and nausea, but no pain. Such cases are apt to simulate cancer of the stomach. The diagnosis is rendered more difficult by the fact that when the case comes under observation there may be no albuminuria, but merely urine of low gravity.

In the early stage of phthisis there may be a form of dyspepsia, probably due to gastric catarrh, the symptoms of which may be so pronounced that the phthisis itself escapes the observation both of doctor and patient. The mistake is particularly apt to occur in young women. In an anæmic young woman the phthisis may often be comparatively latent, and the gastric symptoms prominent. The patient complains entirely of the stomach, and possibly, without the lungs being examined, is treated for dyspepsia.

"URO-KINETIC" DYSPEPSIA.

Gastric symptoms may be secondary to disease in the bladder or urethra. These cases are not well known. They have been described by ROSENBERG under the title "uro-kinetic dyspepsia" which means that the dyspepsia is due to an affection of the motor apparatus of the urinary tract. The patients are often elderly men who suffer from enlarged prostate, and the gastric symptoms are relieved only by treating this. Here, again, there is possibly secondary gastritis set up by retention of urine. But whether that be so or not, there can be no doubt that in some patients enlarged prostate or weakness of the bladder produces nausea and possibly a certain amount of vomiting and frequently, also, some looseness of the bowels.

A man, aged 37, complained of abdominal pain and vomiting, which had been present, off and on, for 6 years, but had been much worse during the last 2 years. He had a good deal of sickness and pain in the morning, but as the day went on they became less. The pain was situated both in the epigastrium and above the left groin, and it came on a quarter-of-an-hour after food; it was relieved by pressure. He had been treated at a hospital as an out-patient for gastric ulcer—an excusable mistake, considering the symptoms, but was admitted. The bladder was found to become greatly distended at times, reaching to the umbilicus, and forming a prominent tumour in the lower abdomen. Only when the bladder was distended did the bad attacks of sickness and retching occur. In one attack he became collapsed, and as the symptoms were urgent the bladder was punctured above the pubes and 44 oz. of urine were drawn off, with immediate relief. It was subsequently found that he had a stricture of the urethra, which was dilated and as long as the urethra remained patent the gastric symptoms did not recur.

This is a typical example of uro-kinetic dyspepsia, although the patient was younger than is the rule. In elderly men who complain of gastric symptoms always examine, for distension of the bladder, any tumour in the lower abdomen, and residual urine.

CHRONIC OBSTRUCTION IN THE COLON.

Much commoner than the above are cases in which gastric symptoms are due to chronic obstruction somewhere in the colon. Here, again, it is the vomiting which leads one astray. Chronic obstruction in the colon from the growth of a cancer may proceed insidiously, so that the patient is not aware of any obstruction of the bowels, although he may admit to some constipation.

A woman aged 50 had been ill for 2 months with abdominal discomfort and frequent attacks of vomiting. She had always suffered a good deal from constipation, which had been more pronounced of late. She became so weak from constant vomiting that she had taken to bed in the last month and during that time she had had every few days violent fits of vomiting, which further reduced her strength. On examination the abdomen was generally distended, and there was visible peristalsis in the colon. The conclusion was that she was suffering from some obstruction in the sigmoid, probably malignant. This was found and removed, and she did well.

In younger people vomiting may result from mere accumulation in the colon from prolonged constipation. Such cases, again, are apt to be mistaken for primary gastric disease.

VOMITING FROM DISEASE OF THE NERVOUS SYSTEM.

Cerebral tumour is occasionally mistaken for gastric disease, especially in children, in whom cerebral tumour is relatively common. It is well to remember that children do not often suffer from chronic vomiting of gastric origin. The supervention of paralysis, optic neuritis, and other signs quickly make the diagnosis clear.

Gastric crises of tabes.—More apt to be overlooked is disease of the spinal cords, such as tabes. The gastric crises of tabes may be very deceptive, particularly when they occur early, before there are any pupil-signs or loss of knee-jerks. The vomiting then may be so urgent and recur so frequently as to suggest gastric disease. The resemblance, indeed, may be so close that the writer has heard of no fewer than 4 cases in which gastro-enterostomy was performed under the diagnosis of gastric ulcer.

A man, aged 39, had been ill for 6 days with severe vomiting, which was specially deceptive in that it had begun immediately after a dinner consisting of beef-steak pudding. He continued to vomit everything for 5 days until he became collapsed, and was brought to hospital. He had also shooting pains in the legs and back which had started on the same day as the vomiting. He had had a similar but slighter attack 3 years before. The knee jerks were absent, the pupils sluggish, and there was paralysis of the bladder. There was no doubt that he was suffering from tabes.

Nervous or hysterical vomiting.—Nervous or hysterical vomiting is very misleading. The writer has seen several cases in Jewesses.

A woman, aged 36, was said to have been ill for 12 months with constant vomiting and pain in the stomach, aggravated by food. On

examination she appeared well nourished. This showed that the protracted vomiting was not due to organic disease, and pointed to hysterical or nervous vomiting, and not to gastric ulcer which had been diagnosed. She was carefully watched, and was found to be constantly bringing up watery fluid, but rarely any food. There was some general tenderness over the abdomen. A stomach tube was passed to impress her, and she was told that the vomiting would cease. This immediately happened, and she left hospital after 2 weeks, a stone heavier than when she entered.

GALL STONES.

MR. MAYO ROBSON and MR. MOYNIHAN have shown that the symptoms of gall stones may be for a long time purely gastric. The description of gall-stone disease given in the text-books is inadequate. It usually deals only with the classic form of the disease, in which a stone passes down the cystic into the common duct and produces biliary colic. But these cases are a minority; in the majority the stone does not pass down the common duct, but remains in the gall bladder and produces quite different symptoms. Again, it is not sufficiently recognised that a patient may have gall stones for years and never be jaundiced.

The pain in gall-stone cases is very deceptive, and may absolutely simulate the pain of gastric disease, for it may come on directly in relation to the taking of food, or even after the taking of a certain kind of food. Some patients can take fluids but not solids; others can take only certain kinds of solids.

In other cases the pain may be a typical "hunger pain" and suggest duodenal ulcer. There is no way of certainly distinguishing between the pain due to gall-stones in the gall bladder and the pain of gastric disease. Cases of gall-stone may be rendered still more like gastric trouble by the fact that the patients often suffer from flatulence. Many women who in the out-patient department complain of flatulence and "the spasms" are the subjects of gall stones, not gastric disease. So that the distinction between gall-stone and dyspepsia is often very difficult. If there be definite tenderness over the gall bladder the difficulty is less, but no physical signs may be found. In many cases only by watching the case, and seeing that it does not improve under ordinary treatment, and perhaps by the pain beginning to radiate towards the right shoulder, is it possible to arrive at a correct conclusion. It is wise in cases of flatulent dyspepsia attended with much pain—in middle-aged women particularly—to remember the possibility of gall-stones.

ANGINA PECTORIS.

This disease is not infrequently mistaken for dyspepsia. A man was said to be suffering from dyspepsia. He complained of eructations which came on particularly on exertion after a meal. When hastening to catch his morning train after breakfast he was apt to have an attack of flatulence, attended by some pain in the "chest." It was suspicious that the pain came on with exertion, and that if he sat still after a meal he did not have it. He had also a very high blood pressure, and his grandfather and father had both died of angina pectoris. A month later he died suddenly. This patient was the subject of angina pectoris, which had simulated dyspepsia and had been treated for some time as a stomach disorder.

A man, aged 65, gave a similar history of flatulence coming on after a meal, and attended by pain which he thought was due to wind. He had an exceedingly irregular heart and a blood pressure of 175. The pain came on only on exertion. The writer therefore diagnosed the minor form of angina, in which flatulence often is a marked feature. It is the flatulence which causes gastric disease to be diagnosed.

ABDOMINAL ANGINA.

This form of angina is not so well recognised and may simulate dyspepsia even more closely. It is due to arterio-sclerosis of the abdominal vessels. The symptoms may be entirely gastric, the patient getting attacks of gastric pain, which usually, however, come on only after exertion, particularly after a full meal, and are associated with flatulence, the pain being relieved for a time by the belching up of wind. In some of these cases there is even hæmatemesis. In abdominal angina the pain is certainly more severe than in ordinary gastric flatulence, and it tends also to radiate upwards into the chest, and possibly down the arms. During the attack there may be much tenesmus. These cases are not so easy to diagnose as ordinary angina, but high blood pressure and thickening of the peripheral arteries are usually present. Treatment directed to the vascular system, particularly the administration of diuretin, is effective.

COLITIS.

Some cases of colitis, particularly muco-membranous colitis, with a tendency to spasm of the bowel, simulate dyspepsia closely. If a patient gets a cramping pain in the transverse colon, he is likely to refer it to the stomach, particularly as the pain is apt to come on when food enters the stomach, owing to the stimulation of peristalsis induced. It is a feature of such pain, however, that it tends to be relieved by pressure, whereas gastric pain is aggravated by pressure.

A girl, aged 21, was brought with a history of pain of this sort. She used to get, not long after eating, violent pain across the upper abdomen, and it was therefore suggested that she might be the subject of gastric ulcer. But she used to get something hard and press it as tightly as she could into the epigastrium, and this always gave relief. It subsequently proved that there was a good deal of membrane and mucus in the motions, and under treatment directed to the colon she lost her symptoms.

These cases of colon pain are rendered still more deceptive by the fact that the transverse colon may be dilated, and give a splash on palpation. The symptoms are apt to lead to the diagnosis of dilated stomach.

CHRONIC APPENDICITIS.

Chronic appendicitis may produce pain only in the epigastrium, and not in the iliac fossa at all. It may produce also pain which is felt only when the stomach tends to get empty, and which is of the nature of hunger pain.

A man aged 38, was seen. He had previously suffered from some acute abdominal trouble for which he was kept in bed. He had suffered a good deal from pain—which was almost constant—and he lost weight. The pain was felt in the lower right abdomen and also in the epigastrium. Even liquids increased the pain, and he practically could not take solid food. He made no complaint of vomiting, and the bowels were regular. On examination, some slight tenderness in the right iliac region and some thickening and gurgling in the region of the cæcum were found. Exploration revealed an appendix thickened, kinked, and bound down. After its removal he lost the pain. The aggravation of the pain by the taking of solids might easily have suggested trouble.

EXTRA-ABDOMINAL PAIN.

Spinal caries and pleurisy may simulate dyspepsia, especially in children. In spinal caries the child sometimes refers the pain to the epigastrium. Pleurisy also, particularly left pleurisy, may easily deceive.

ERUCTATIO NERVOSA.

Eructatio nervosa or "aerophagia" is almost always diagnosed as dyspepsia. A perfectly healthy looking man, aged about 40, had suffered for years from "violent belching up of wind" both day and night. He consulted about ten different physicians in various parts of the world and had taken all sorts of diets and stomach mixtures without any

benefit. It was a case of air swallowing, or "aerophagia." After the nature of his case was explained to him he entirely lost his symptoms by day, and almost lost them at night.

There are two points by which these cases can be distinguished from gastric disease. First, the flatulence is much worse when the stomach is empty. True gastric flatulence tends to come on after meals. Secondly, the patient can eructate to order. It is curious that this neurosis is commoner in men than in women, and it may occur in otherwise perfectly healthy men. It is usually sufficient to explain to the patient that he is unconsciously sucking down air, and that, instead of making violent efforts to bring it up, when the attack comes on he should keep his mouth open, for then he cannot suck down any more air, and this will certainly bring the attack to a termination. Bromides are also useful. They do far more good than stomach mixtures and diets. So far, indeed, from being strictly dieted, many of the patients, like most nervous ones, need to be fed up.—*The Medical Review*.

An Investigation into the Chemical Composition and Properties of the Milk (Water) of the Cocoanut.

BY

DR. LAL MOHAN GHOSAL.

Cocoanut, as is well known to every Indian, is a fruit the uses of which require no new introduction. Its use as an auspicious fruit in marriage ceremony, as one of the Panchfal (five fruits) of the Sradh and other Pujahs, in the Mangal Ghat, and what not, we are not concerned with; neither its economic use from a practical point of view as fuel, oil and rope need not be detailed here. We are only concerned with the milk only as a drink and its usefulness. For a detailed use from an economic and social point of view HOOPER and DYMCK'S *Pharmacographia Indica* may be consulted.

It is intended to give in these pages the results of the experiments conducted on the milk of cocoanut, both chemical and physiological:—

Popular use.—About the popular uses of the milk (water) of cocoanut every one is familiar, and even if perchance any one in India does not know what it is, he will never forget the refrigerating and soothing effect of the milk of the unripe fruit in hot weather, especially when taken after a brisk exercise.

Chemical composition.—Analysis of about 10 samples of the milk of the unripe fruit was done by myself, and the average composition is laid down here.

Total quantity of fluid in an unripe fruit varies from 300 to 500 c.c. (10 oz. to 16 oz.)

Sp. gr. ..	..	1020 to 1027.
Reaction ..	..	acid in every case.
Protein ..	..	62 per cent.
Total carbohydrate ..	..	6.2 "
Carbohydrate as glucose..	..	5.5 "
" cane sugar..	..	trace.
Fat ..	..	doubtful.
Chlorides ..	..	55 per cent.
Phosphates ..	..	trace.
Total solids..	..	7.68 per cent.
Water ..	..	92.32 "
Ash ..	..	.86 "
Total acidity ..	..	.05 "

No free or vegetable acid could be detected; the acidity is probably due to the presence of Sodium Dihydrogen Phosphate which on ignition turns into P_2O_5 .

The sugar consists mainly of glucose. It was verified by the formation of typical glucosazone crystals when the milk was treated with Phenyl Hydrazin and Sodium Acetate.

I could not detect definitely any fatty matter in the milk after ether extraction. The milk was treated with ether in equal parts, the ethereal layer separated and treated with osmic acid; the extract treated thus instead of turning black at once (indicating fat) turned brown about an hour after, which effect may be due to the action of the sun light on the osmic acid. So I am doubtful about the presence of fat in the milk, and my answer is in the negative.

Along with this, milk of ripe fruit in various stages was also analysed; the analysis shows decrease in the amount of water which became more acid; Glucose became reduced while the proportion of cane sugar increased and finally formed the chief constituents. There was an increase of the inorganic salts and consequent increase in sp. gr. Thus the average composition of milk of ripe fruit showed the following results:—

Total quantity of fluid varies from 200 to 300 c. c. (6 to 10 oz.)		
Sp. gr. ..	..	1030 to 1040.
Reaction ..	..	acid.
Total Carbohydrate ..	..	5.93 per cent.
Glucose ..	..	4.82 "

Canesugar ..	..	1.11 "
Fat ..	..	nil.
Proteins ..	..	.59 "
Chlorides ..	..	.86 "
Phosphates..	..	trace but the reaction is well marked.
Total solid..	..	8.72 per cent.
Water ..	..	91.28 "
Ash ..	..	1.20 "
Total Acidity ..	..	.084 "

The analysis in case of ripe fluid varied considerably according to the age of the sample, sugar in some cases being practically cane sugar while acidity increased a good deal in some cases being as high as 10 per cent. In case of unripe fruit the variation was much within limitation.

The Physiological experiments were conducted only with the milk of the unripe fruit.

1. Osmotic determination; 90 c. c. of the water was injected into the peritoneum of a guinea pig weighing about 18 oz.; two hours after it was found that only about 30 c. c. of the fluid remained in the peritoneal cavity, the rest being absorbed; the remainder of the fluid was much the same as when it was injected; there was no diapedeses of any corpuscles nor was there any solution of Hæmoglobin. There was no injection of peritoneum or any other surrounding vascular structure. No unusual symptom was observed after the injection of the fluid.

The remaining fluid was subjected to analysis for inorganic constituents and all that was observed is that the chlorides increased a little, showing about .72 per cent. while original fluid injected showed a chloride value of .64 per cent., i.e., an increase of .08 per cent; this increase is possibly due to the solution of chlorides from the fluid that is always present in the peritoneal cavity.

This experiment shows how easily the milk is absorbed and it consequently follows that the milk is easily absorbable through the stomach as well.

Thus the fluid appears to be in a perfect condition for subcutaneous injection if sufficient quantity can be procured. Neither is there any danger of infection from its injection as it is perfectly sterile. But from the following experiments its efficacy for intravenous injection may be doubted:—

Hæmolytic experiments.—These experiments were done by Wright's method. Equal volume of the fluid does not cause any hæmolysis at

all; double the volume causes a precipitate, and complete hæmolysis occurs by 4 times the volume.

The precipitate by double the volume is probably due to the acidity of the milk and consequent precipitation of the albumen of the serum. Thus although the milk appears to be in a perfect condition to be given by mouth or subcutaneously or by peritoneal injection as shown before, its efficiency, when directly injected into the vein in mass, is doubtful.

Therapeutics.—The milk is useful as a soothing agent for pain in acid dyspepsia, especially when taken after a meal; this effect is due to a check in the acid secretion of the stomach by the acidity of the milk. It has also been found to be a great refrigerant for thirst in febrile diseases when all other means have failed.

In obstinate hiccough it sometimes acts as a marvel when taken fresh and in quantity with ice, when every other remedy has failed.

The thirst of Cholera is soothed in considerable degree. This effect is probably due to the quick absorption of the fluid and consequent dilution of the serum.

That it is a good diuretic can be testified by the increase in the quantity of urine and especially almost immediately after taking.
—*Journal of Food & Drugs.*

The Treatment of Spasmodic Asthma.

BY

R. O. MOON, M. D. (OXON.) F. R. C. P. (LOND.)

Physician to Hospital for Diseases of Heart, Soho Square, and
Royal Waterloo Hospital, &c., &c.

SPASMODIC ASTHMA belongs to that class of diseases which, like epilepsy and migraine, have been described as paroxysmal neuroses. A certain similarity to epilepsy was perceived as far back as the seventeenth century by VAN HELMONT, who spoke of "dry asthma" as "an epilepsy of the lungs." Such diseases are characterized by an extreme capriciousness in their way of reacting to treatment, and in none is it more important to observe the maxim of treating the patient and not the disease; for the number of remedies vaunted for asthma is indeed legion, and most of them can give evidence of at least some temporary or partial success. In a disease, however, in which personal idiosyncrasy is so conspicuous a part, it is only reasonable to expect that the lines of treatment must be varied and that at times they may seem rather arbitrary. In spite of the multiplicity of remedies, new and old, certain

general lines of treatment do seem to emerge, which, if followed intelligently, will be rewarded by a very fair amount of success.

Naturally, the treatment divides itself into two parts: (a) The general treatment between the paroxysms with a view to preventing their occurrence; (b) the treatment of the paroxysm itself.

Spasmodic asthma being a respiratory neurosis, attention should be directed primarily to the central nervous system, and an effort made so to brace up that system as to render it less likely either to discharge itself spontaneously or to be excited reflexly by comparatively trivial causes.

(1) Climate.

To lay down rules about locality may seem almost impossible, as every one knows the extraordinary caprice shown by this disease, and how a climate which may be favourable in preventing the attack may be inimical to the general health and *vice versa*. Thus many cases with bronchitis are benefited by the Riviera and places on the south coast, such as Hastings and Bournemouth, as far as the bronchitis is concerned, but they are not good for the asthma. As is well known, London and the most crowded parts of it often prove highly beneficial to the asthmatic; indeed, that great authority, HYDE SALTER, goes so far as to say that "in the large majority of cases an urban air is the air that cures; and of a city air, that seems to be best which is most urban—the densest and smokiest." While residing in the curative air the patient will be free from his asthma, but his asthmatic tendency is not eradicated, so that the attacks will return when he is again placed in an unfavourable environment. An important point is to select a climate in which the patient can be a good deal in the open air, and even in these enlightened days it may still be found necessary to insist on sleeping with open windows. During the summer in cases where the bronchial mucous membrane is highly sensitive there may be a difficulty in taking exercise in the open air owing to the pollen floating in the atmosphere, which is most provocative of the asthmatic paroxysm; such cases will often do well at the seaside, where the prevailing winds are from the sea.

(2) Exercise.

Most cases of pure asthma are improved by taking plenty of exercise, and walking or riding are as good as anything else. What is required is a gentle and sustained working of the muscles so that violent exercise is not so beneficial, and anything like over-exertion should be avoided.

(3) *Baths.*

Sea-bathing in the summer is an excellent tonic to the nervous system. As a rule, the asthmatic patient is not equal to the ordinary cold bath of a morning, but a warm bath, temperature 90° F., with the addition of Tidman's sea salt is often most beneficial. Another excellent plan is while sitting in warm water to have cold water poured down the spine and then to be well rubbed with a rough towel.

(4) *Diet.*

General experience teaches us that something may be done towards avoiding attacks by a careful regulation of the diet, but we ought not to be unduly precise about it. Such things as malt liquors and cheese have long been known as most provocative of an asthmatic attack. But there is no such thing as an asthmatic's diet. The times and seasons of eating are more important than what is actually eaten; method and regularity of life are what these patients chiefly require. Most asthmatics are fairly well in the early part of the day, so that there is little objection to breakfast and lunch being hearty meals, but the evening meal should be light and simple and not less than a couple of hours after it should elapse before going to bed. In spite of the well-known relation of asthma to gout there does not seem to be any adequate evidence that uric acid plays a part in the production of the disease. As in migraine so in asthma it is often observed that shortly after an attack patients may do with impunity things which would certainly bring on a seizure when nearer to the expected time.

(5) *Removal of Exciting Causes.*

In many cases of asthma, the smell of certain flowers, and emanations from particular animals, such as cats, dogs, or horses, will excite the paroxysm, and patients will naturally avoid such sources of irritation. It is well to remove such forms of nasal obstruction as polypi and adenoids, but without holding out too sanguine a hope that such removal will cure the disease. Still less should we expect *a priori* much success from cauterizing the nasal mucous membrane, but Dr. A. FRANCIS has treated a series of cases in this way, and claims that the best results are obtained when the patients have no recognizable lesion of their nasal mucous membrane. In such cases one must suppose that suggestion plays an important part.

Drugs.—For preventing the recurrent attacks of asthma, there is no drug in my experience so effective as arsenic. Beginning with 3 minims of Fowler's Solution three times a day, it may be gradually increased, but there is no object in pushing it to large doses. Some combine it with

Iodide of Potassium, which is certainly a most useful drug in the treatment of asthma. I have found it, however, more satisfactory to give the arsenic alone, and if the attacks are recurring rather frequently, to prescribe also at bed-time a dose of Iodide of Potassium, *e.g.*:—

R—Pot. iod...	...	...	gr. viii.
Vini ipecac.	...	...	m. xv.
Syrupi toluiani	...	...	3ss.
Aq.	...	...	ad ʒi.

Sig.: To be taken at bed-time.

Stramonium is sometimes useful in keeping off the attacks when given in the form of the tincture (10 minims) three times a day, but I have found it more effective when given only at bed-time to avert the spasm. A useful pill at bed-time is the following:—

Ext. stramonii...	...	...	gr. ½
Ext. belladonnæ	...	...	gr. ½
Ext. conii	...	...	gr. ii.

TREATMENT OF THE PAROXYSM.

Posture.—As a rule, the asthmatic is made most comfortable by sitting in a chair and leaning forward on something in front of him, so as to raise the shoulders.

Heat to the surface by means of hot flannel stupes all over the chest, or a hot bath, owing to the vaso-dilation of the superficial vessels, will give distinct relief in the milder cases.

Morphia.—A subcutaneous injection of ¼ grain is nearly always rapid and effective in allaying the paroxysm, but the objections to making use of this remedy in a chronic disease like asthma are too obvious to dwell upon. Nor is such a drastic remedy at all necessary in most cases, as the paroxysms can generally be relieved by simpler methods, so that it should be held in reserve for very severe paroxysms only.

Chloroform inhalations are nearly always effective even before complete anæsthesia is established, but the effect is only transient, and there is the further objection that patients are known to acquire a liking for the drug.

Amyl Nitrite and *Nitroglycerine*, by causing vaso-dilatation, can be relied on to relieve the paroxysm, but here, again, the effect is apt to be only transient.

Chloral Hydrate in large doses (25 to 40 grains) will allay the paroxysm, but many cases of asthma are associated with cardiac dilatation, which thus renders it often a most unsuitable drug.

A more simple remedy, and one quite useful for milder cases, is a cup of strong coffee without milk or sugar. To be successful, it should

be taken on an empty stomach, otherwise the tannin contained in the coffee coagulates the peptones, and this would conduce to keeping up the paroxysms.

Inhalations.—Most patients have discovered for themselves the value of various inhalations before they are seen by a doctor. These inhalations are generally effective for the moment, and only too successful, in that they deter the patient from taking those necessary measures for the toning up of the nervous system, which alone seem to be the rational method, if not of getting rid of the asthmatic tendency, at least of reducing it to a minimum.

Nitrate of Potassium.—Filling the room with the fumes produced by burning nitre paper is one of the most innocent of these remedies. The nitre paper can be prepared by soaking strips of thick blotting paper in strong solutions of nitre in water and then drying them. The fumes are best inhaled when diluted with air. They contain a good deal of carbonic acid and water, and the immediate effect upon the patient is to produce a sensation of drowsiness.

Smoking.—Tobacco in the form of cigar, cigarette, or pipe is a most powerful remedy for those who are not habitual smokers; it is certainly more effective when the fumes are inhaled, though this involves the danger of the tobacco acting as a local irritant to the respiratory passages and so setting up bronchitis.

For this purpose stramonium, belladonna, and hyoscyamus are most useful; cigarettes can be made with nitrated papers, and any of these drugs can be used in place of tobacco. As a rule asthmatic patients have found out for themselves the one which suits them best.

Most of the popular asthma cures are composed mainly of nitrate and stramonium. The American preparation known as "Tucker's" has for its active ingredients cocaine and atropine.

Other remedies which may at times prove useful are lobelia, given in the form of tincture, 15 minims every half hour till the paroxysm is allayed, or the physiological effects—nausea and a feeling of faintness—appear; similarly, belladonna may be given at frequent intervals till the paroxysm ceases or the physiological effects are present. The liquid extract of grindleia (10 to 20 minims) every three hours flavoured with syrup of orange peel to conceal its unpleasant taste will often cut short an asthmatic attack.

In long-standing cases of asthma sooner or later bronchitis and emphysema develop with their attendant train of evils; for these blue pill and an eliminant line of treatment are most suitable.

It must be always remembered that most of the patent powders and medicines which claim to be cures for asthma are in the nature of depressants, and are therefore quite unsuited for those cases which are associated with cardiac or renal disease. Apart from this they only attempt to deal with the paroxysm, and consequently no effort is made to brace up and harden the nervous system, so that it may more readily resist the causes of the paroxysm.—*Folia Therapeutica.*

SURGERY.

A Simple Means of Removing Plaster Apparatus.

STRANSKY—In spite of the use of special instruments the removal of apparatus containing plaster-of-Paris is often troublesome, and in the case of a recent fracture may cause injury. Methods of softening the plaster by water either alone or with the addition of salt are rarely successful as the apparatus becomes coated with a layer of grease which prevents their action. The writer has obtained satisfactory results by moistening the line of section with vinegar applied on a tampon of wool. After a minute the plaster will be found completely softened so that it may be easily divided with a pocket knife or ordinary scissors—a procedure easy for the surgeon and painless for the patient. By this method a plaster case for fracture of the femur, consisting of 80 turns of bandage, may be removed in about a minute-and-a-half.—*The Medical Review.*

Multiple Phlebitis in Secondary Syphilis.

G. THIBIERGE and P. RAVAUT—The venous localisation of syphilis in its early stages is now well established though it is insufficiently known. Numerous cases have shown its characteristics: it affects the superficial veins of the limbs, usually of several limbs; there is only slight inflammatory reaction; embolism never occurs; and resolution is slow. The following case illustrates these facts, and also shows the pathological anatomy of syphilitic phlebitis, and for the first time gives bacteriological and experimental proof of the syphilitic nature of this phlebitis.

A man, aged 25, was admitted to hospital on Feb. 25. He contracted syphilis in the previous Dec. There was an abundant papular eruption. He was given mercury. On Mar. 7, while his legs were being palpated to ascertain the degree of infiltration of the syphilides, a hard, slightly painful cord of the size of a goosequill was found in the position of the internal saphenous vein in the lower two-thirds of the right thigh. There was neither redness nor œdema of the limb. For 2

days the patient had felt slight pain in the right leg. On the inner side several hard cords were found, with the same characters as the cord in the thigh. In the left leg a similar cord was found, although no pain was felt. On Mar. 8 5 cm. of the right internal saphenous vein were removed between two ligatures. On the following days the lesions in the left leg increased and the left internal saphenous vein, which was neither painful nor tender, formed in the calf a "pipe tube," which was prolonged into the thigh. There was no fever; the patient was only a little weak. On Mar. 21 similar lesions were beginning on the front of the left forearm. On the 26th slight pain was felt in the right elbow and arm. On the following days more veins became affected in the forearms.

The excised fragment of vein was almost completely occluded. It contained neither clot nor liquid blood, but only serous fluid. Smears made from the internal coat of the vein showed under the ultra-microscope amid cellular debris 5 spirochaetae pallidae, of which two exhibited movements. The occlusion of the vein was due to proliferation of the internal coat which formed a series of prominences budding into the lumen of the vein. At certain places these prominences showed traces of old hæmorrhages. A monkey was inoculated from the excised vein and lesions characteristic of syphilis were produced.—*The Medical Review*.

Successful Passage Per Rectum of a Key.

BY

G. AINSWORTH, M. B., Ch. B.

A SHORT time ago the writer had an interesting case, which from its sequel is worth relating. The patient was a male child of two years of age. I was sent for in great haste one night with the information that the child had swallowed a key of fair dimensions. The fact that the key was slightly rusty and an awkward shape from the point of view of a successful recovery further increased the parents' and my anxiety as to the result. At first sight there was nothing particularly disquieting in the appearance of the boy. He was pale, quieter than usual, and inclined to drowsiness. Temperature was normal, the pulse was rather quicker and not so forcible, the skin was clammy, and pupil dilated. On palpating the abdomen, tenderness in two places seemed evi- slight dulness was noticed in the region of the cæcum. An emetic of ipecacuanha wine and warm water was first tried with no results, strengthening the theory already formed that the key had gone through

the stomach into the intestines. A sedative of bromide of potassium was given to rest the child for the night, and in the absence of urgent symptoms I decided to await results. The following morning I ordered a purgative to be given early, and porridge to be the only food for breakfast. The next day I was still agreeably surprised to note the child seemed little, if any, the worse for its experience. The bowel was further cleared by an enema of warm water and soap, but nothing was obtained except slimy motion. The child had had a good night's rest, and seemed free from pain. The porridge diet was continued the next day and the castor oil the following morning, followed by another warm injection. This process was continued until the fourth day; the patient meanwhile was not apparently suffering and no undue nausea or distension occurred. The same evening I received a visit from the father who was in good humour, and to my astonishment informed me the key had been passed in the last motion, and that the child was doing well. He brought the key with him for inspection, and I was surprised at its shape and size. It was approximately $1\frac{1}{2}$ inch in length and $\frac{3}{4}$ inch in width at its widest part. Its passage was accompanied with very little pain by all accounts, and the youngster was in better spirits. He had a good night's rest, and I found him next morning quite normal and taking food with avidity. Convalescence was uninterrupted.

The remarkable points of interest in this case are the absence of pain or distension, the freedom from acute symptoms of bowel obstruction, such as vomiting, peritonitis, and subnormal temperature, and the good recovery without recourse to operation.

In cases such as this there may be constipation (temporary and complete) or watery diarrhoea, pain, colic, vomiting, and distension. Sometimes one can feel the faeces or tumour, and dulness is noticed on percussion. Should chronic obstruction supervene, a common sign is peristalsis—movements of the distended coils of intestine.—*The Hospital*.

Anaesthetics in General Practice.

BY

J. ALLAN, M.D., &c.

The report recently issued by the Departmental Committee appointed by the Home Secretary to investigate the subject of anaesthetics, has brought the matter prominently before the profession. The conclusions come to by the Committee were given in the *Medical Times* a few weeks ago. There can be no doubt as to the great importance of the question, and it is to be hoped that the recommendations submitted by the Committee will receive due consideration.

The accusation that a newly-qualified medical man has had no practical experience in the administration of anæsthetics will not now-a-days often be heard, because in most of the medical schools this subject is now included in the curriculum. Not so very long ago it was quite common for a man to graduate without ever having given an anæsthetic. Theoretical knowledge is all very well, but if practical experience is necessary in any branch of medicine, it is assuredly so in anæsthetic work. Such practical knowledge is not to be gained by watching from the benches of an operating theatre another person giving chloroform, or ether—it can only be acquired by one actually administering the anæsthetic, preferably at first under skilled supervision.

There is a tendency in some quarters to regard this branch of medicine as a speciality to be undertaken only by those who have had special training. There seems to be no good reason for such limitation, and it is very questionable if the duty of giving anæsthetics will ever fall entirely into the hands of specially-qualified anæsthetists. The work can be quite well accomplished by those in general practice, and many practitioners are skilful and efficient anæsthetists. It is also reasonable to suppose that a number of patients would prefer this duty to be undertaken by the family medical attendant. In some cases where special difficulties are anticipated, or perhaps where prolonged anæsthesia is required, it might be advisable to call in a trained anæsthetist, but under ordinary circumstances there is no reason to doubt the ability of the general practitioner for this branch of work.

In choosing a general anæsthetic for use in private practice several points have to be considered. I shall take for review the following:—Nitrous oxide gas, ethyl chloride, chloroform and ether. Of these anæsthetics nitrous oxide gas and ethyl chloride are only available for minor surgical work where anæsthesia of short duration is required. Their use is thus strictly limited. Nitrous oxide gas is the anæsthetic *par excellence* for dental work in cases in which a few stumps have to be extracted. It may also, however, be employed in surgery, for instance, incising whitlows, opening abscesses, &c. It is frequently employed as a means for inducing rapid anæsthesia preparatory to the exhibition of other anæsthetics, especially ether. If a practitioner numbers nitrous oxide gas among the anæsthetics he makes use of, he will doubtless take in hand at his own surgery the necessary minor operative work, because the inconvenience of carrying about the apparatus, especially the heavy cylinders containing the gas, is quite apparent. Ethyl chloride affords anæsthesia of short duration, and therefore can only be utilised within certain limits. It is also of service in dental work, and an experienced manipulator can extract eight or more teeth when

the patient has been rendered unconscious by ethyl chloride. I have myself removed six stumps under one administration of ethyl chloride, and I do not profess to be a skilled dentist. Surgical measures that can be performed under this anæsthetic are cauterising nævi, avulsion of nail, removal of enlarged tonsils and adenoids, scraping superficial sinuses, circumcision, &c. Like nitrous oxide gas ethyl chloride is often used as a preliminary anæsthetising agent.

For operative procedures that will necessitate anæsthesia for longer periods than can be got by the above two anæsthetics, chloroform or ether, or a mixture of these, must be given. For work in general practice chloroform has always been the favourite, and in Scotland, at any rate, its use a few years ago was practically universal. There has within recent years been a tendency in some parts of the country to give ether more frequently than formerly, especially now that ether administered by the open method has been found practicable. The CÆ mixture has also of late been recognised as a valuable anæsthetising medium. Chloroform probably owes its popularity as an anæsthetic in private practice to the ease with which it can be carried from place to place and to the simplicity of administration. Formerly the presentation of ether was associated with Clover's or other variety of inhaler, but now it is recognised that ether can be given by the open method. Certainly the transport of such an apparatus would occasion some inconvenience, and its efficient working causes a certain amount of trouble—but probably the difficulties have been over-rated. Some practice is undoubtedly necessary to enable one to administer ether properly by means of a Clover's inhaler, but after a few lessons there should be no difficulty in manipulating the apparatus. There is now a general consensus of opinion in favour of the exhibition of ether by the open method, but the difficulty is that large quantities are used, the mask becomes saturated, and, unless great care is exercised, the ether may get on to the patient's face. To obviate or minimise this last risk, use three or four layers of lint or flannel in the construction of the mask and interpose between the face and the edge of the mask a layer of wool or gauze. A mixture of chloroform and ether is often employed, and as a routine anæsthetic it is about as good as any. The proportions in which the drugs are mixed vary, but the two most common combinations are C₁ E₂ (one of chloroform to two of ether) and C₂ E₃ (two of chloroform to three of ether). The ACE mixture is sometimes utilised—the proportions being one of alcohol, two of chloroform, and three of ether. A special form of mask is generally used for this mixture.

As regards safety nitrous oxide gas is of course the safest of the above anæsthetics, and in the hands of a qualified medical man no

danger should accrue to this anæsthetic. Taking chloroform and ether we find that chloroform is much more dangerous than ether, and this is an argument in favour of the use of ether whenever possible. Ethyl chloride was at one time regarded as a safe anæsthetic, but, as a matter of fact, it is in this respect intermediate between ether and chloroform. A number of fatalities have been reported with this anæsthetic when it is given to a patient sitting in the upright position, as in a dentist's chair. It is advisable to administer it only when the patient is recumbent, because it appears to produce a considerable fall in the blood pressure.

In making a choice of an anæsthetic for particular cases one must be guided entirely by the individual case under consideration, but a few general rules may be mentioned. Chloroform appears to be the best anæsthetic for children in major operative work. It is well borne by them. The CE mixture is also good, but ether alone is not so suitable, especially in the case of babies. For persons from puberty to middle adult life ether can, as a rule, be safely given in most cases. In old people, however, ether is, in many instances, contra-indicated, owing to the presence of bronchitis, or to the tendency to pulmonary affections. These old people stand chloroform very well, and if it should seem necessary to give a little ether, the CE mixture can be administered, care being taken to see that there is free admixture with air from time to time. The statement that pneumonia, bronchitis, &c., may follow the exhibition of ether, has, I think, been much exaggerated, and with careful administration there should be pulmonary complications in few cases. In a considerable series of cases I have only met with one in which pneumonia supervened after ether had been given, but as the patient (a farm labourer) had been brought in from the country to the town in an open cart on a chilly day in spring, there was some reason to doubt whether the attack could be justly attributed to the anæsthetic. With ether given by the open method there would be less likelihood of lung affection afterwards. From my own observations I believe that ether should not be administered by the closed method to patients suffering from weak cardiac action. It is preferable to give it by the open method or to employ the CE mixture. For operations about the rectum or genito-urinary system ether is the best anæsthetic to use. In phthisis cases and in fact short-necked individuals CE mixture is probably the most suitable. As a matter of fact no definite laws should really be laid down, for each case should be carefully considered by itself, and after a review of all circumstances, the anæsthetic to be given chosen.

It may be asked what apparatus should a person intending to administer an anæsthetic have with him; what in fact constitutes an anæsthetist's armamentarium? The specialist will doubtless proudly

point to the well-stocked table he likes to have when undertaking this class of work. In private practice it is not always easy to realise the ideal. No one, however, should take in hand the exhibition of an anæsthetic with simply his bottle containing the anæsthetic and a piece of lint. There are certain necessary things that should always be at hand when an anæsthetic is given, no matter how simple the case may be. It is very often in these apparently simple cases that accidents unexpectedly occur. These necessary items are a mouth gag, tongue forceps and a hypodermic syringe charged with strychnine or other cardiac stimulant. Some may think it superfluous to have the hypodermic syringe filled, but nevertheless it is a wise precaution. In 99 cases out of 100 it may not be required but, if it should be necessary in the hundredth case, it is not desirable that there should be any delay in using it. It takes time to fill a hypodermic syringe, and the prompt injection of strychnine may avert a fatal syncope. If the syringe is filled beforehand one can make certain that it is in working order. Always be prepared for emergencies, is quite an apt aphorism. The anæsthetic can be given from a towel or piece of lint, but it will be more comfortable both for the patient and for the anæsthetist if a Schimmelbusch's or other form of mask is used. Such a mask is small and light and is really not difficult to carry about. While the above mentioned requisites may be taken as the minimum with which a person giving an anæsthetic should work, it is desirable that in important cases he should have other things at hand—such for instance as amyl nitrite capsules, a minim measure glass, an extra hypodermic syringe, brandy, solution of strong ammonia, throat sponges, a basin, one or two towels, &c.

In concluding these brief general remarks let me just give a few words of warning. As I mentioned above, the ideal cannot always be attained in general practice, and, therefore, it is probably hopeless to advise that no anæsthetic should be given except when another medical man is present. It is true, all the same, that it is somewhat risky for a practitioner to attempt the double duty of anæsthetist and operator. Again, a medical man should never administer an anæsthetic to a female patient unless a third person be present. The reason for this is perfectly obvious. Lastly, never tell a patient's friends that there is no danger in the exhibition of an anæsthetic, and be especially careful about this in the case of parents whose child it is proposed to anæsthetise. It is much better to frankly admit that there is an element of danger in every case, but that with proper precautions the risk is slight. With regard to patients themselves the matter presents much difficulty, but I think that on the whole it is advisable not to lead them to believe that there

is any danger, especially in the case of neurotic individuals. In such persons the mental perturbation caused by the thought that there is a possible danger would undoubtedly render more perilous the administration of the anæsthetic—*The Medical Times*.

Burns treated with Tincture of Iodine.

DESCOMPS has been using tincture of iodine as an antiseptic application in burns, with the happiest results. He begins by painting the skin around the burned area with the liquid, using a cotton pledget sufficiently small to follow the irregularities of the edge of the burn accurately. He then paints the surface of the burn with the same, touching a small area at a time. If any part of the burn is too tender to bear the application of the full-strength tincture, he uses the compound liquor of iodine, sufficiently diluted so as not to be painful. Pain is to be avoided, as it increases the tendency to shock.

After the application is finished, a dry aseptic dressing is invariably applied. At subsequent dressings it is wise to paint the surrounding skin with the tincture of iodine from time to time. But the surface of the burn should not be touched unless there is a tendency to the formation of pus under the crusts, in which case the suppurating spots are touched again.—*The Therapist*.

Chamois-leather to Prevent Bed-sores.

DR. MORICHAU-BEAUCHANT has published a note concerning a procedure which, he thinks, may have great results in practice. In addition to the powders, cotton-wool, india-rubber cushions, etc., which ordinarily serve in the prevention of bed-sores, he proposes to interpose between the sheets and the points of contact with them of the body a piece of chamois-leather. The article which in commerce goes by that name is nothing more or less than a sheepskin which has undergone a particular preparation called "chamoisage." It is the soft side of the skin which should be applied to the part which it is desired to protect. Being of great firmness, it can be used in lifting the patient. It washes well, is durable, and comparatively inexpensive. It can be used by itself or may be interposed between a rubber air-cushion or water-bed. The author was struck by the success which attended its use in a recent case in which the ordinary methods had been tried without benefit. While little known in France, he believes that this method is largely used on the Continent, for a manufacturer of Niort declared to him that he exported annually large numbers to Continental hospitals.—*The Hospital*.

A New Suture.

DR. KERMISSON recently reported to the Paris Academy of Medicine on the work of Dr. CHASTENET de GERY respecting the utility of a new absorbable suture made from fish-skin. The new suture, while absorbable and aseptic, has the advantage over catgut that it is made from material which never contains tetanus bacilli. Dr. KERMISSON, after a preliminary trial on animals, used the material in fifteen operations of different kinds in man. In all cases absorption was complete and asepsis ensured. The sutures are exceedingly strong, but are less elastic than catgut, and have the disadvantage of always being of a uniform size. If this last objection can be overcome the material promises to be of surgical value. —*The Hospital*.

Improved Liquefied Carbolic Acid.

Liquefied carbolic acid made by adding 1 part of spirit to 5 parts of solid phenol, has several advantages over the present form made with water. It never congeals, is miscible with oil and ethereal oils, and does not turn red on keeping. In the dilutions in which it is used for applying to wounds the small proportion of alcohol could have no ill effect on them.—*Journal of Food and Drugs*.

* Status Thymo-Lymphaticus and Its Relation to Sudden Death.

BY

GERHARD HUTCHISON COCKS, M. D.

Adults and children with the condition known as status thymo-lymphaticus are especially liable to die from infectious disease, and are particularly subject to death from shock and death from anæsthesia.

The term *status thymo-lymphaticus*, or *status lymphaticus*, is applied to people who present hyperplasia of the thymus gland, lymph-nodes, tonsils, lymphatic elements of the spleen and intestinal tract, and lymphoid marrow of the long bones. Associated with this condition are often found hypoplasia of the heart and arteries; evidences of infantilism, signs of old or recent rickets, abnormalities of the thyroid gland, idiopathic epilepsy (Ohlmacher), acromegalia, Addison's disease and myxœdema. There are many grades of status lymphaticus from cases showing simple hyperplasia of the thymus to those exhibiting extreme enlargement of this gland with pronounced hyperplasia of all the lymphatic elements of the body.

* Paper read before Section on Laryngology and Rhinology of the New York Academy of Medicine, April 27, 1910.

There is considerable doubt that status thymicus and status lymphaticus are identical conditions. ADAMI and NICHOLS state that they personally regard the thymus as a lymphatic organ. According to HART, the newer investigations of WIESEL and HEDINGER tend to prove that the two are essentially different phenomena. In pure status lymphaticus there is present a *hypoplasia* of the chromaffin system, especially in the adrenals, analogous to that found in Addison's disease. In pure thymus hyperplasia, on the contrary, the chromaffin system is always well developed. Again, the thymus is developmentally an epithelial organ, derived from the hypoblast of the third visceral cleft. The epithelial elements gradually atrophy, the sole representative of their existence being the Hassall bodies, which are supposed to be due to coalescence of the epithelial remnants. The structure is finally substituted by vascular connective tissue from which the lymphoid elements are derived (ADAMI and NICHOLS). Thus the thymus at birth consists largely of lymphatic tissue like that of the lymph-nodes, spleen and other organs of the lymphatic system.

For the purpose of this paper we shall speak of status thymicus and status lymphaticus as identical, using the terms status lymphaticus or status thymo-lymphaticus synonymously. Perhaps future investigators may throw more light on this interesting problem.

NORMAL WEIGHT OF THYMUS.

The question as to the normal weight of the thymus at different ages is a much mooted one. HAMMAR believes that the thymus undergoes rapid involution in both acute and chronic illnesses. In death from disease, he claims that the organ is often reduced to one-twentieth or more of its normal weight. In support of this view HAMMAR quotes JOHNSON, who reports that four days' starvation of dogs diminishes the thymus to two-thirds its normal weight; while thirty days chronic under-feeding brings about a thymus weight of one-one-hundredth of the normal.

Below are given figures for the normal weight of the thymus at different ages, taken from HART:—

HAMMAR		FRIEDLEBEN	
	Grams.		Grams.
For new-born	.. 13.26		
1-5 years	.. 22.98	1-0 months	.. 20.7
6-10 "	.. 26.10	9-24 "	.. 27.3
11-15 "	.. 37.52	2-14 years	.. 27.0
16-20 "	.. 25.58	15-25 "	.. 22.1
		25-35 "	.. 3.2

		VON SURY.	
21-25 "	.. 24.73	New-born	.. 14.4
26-35 "	.. 19.87	Child in 1 month	.. 15.0
36-45 "	.. 16.27	2-9 months	.. 24.3
46-55 "	.. 12.85	9 months-2 years	.. 23.2
56-65 "	.. 16.08	2-14 years	.. 25.8
66-75 "	.. 6.00		

Thus we see that the average weights obtained by HAMMAR are much greater than those of FRIEDLEBEN and VON SURY. HAMMAR attributes this to the fact that his material is taken from one hundred and twenty-six individuals who died while in complete health, from accidental causes. On the contrary, VON SURY's figures, which practically agree with FRIEDLEBEN'S, were taken from children who died from acute and chronic diseases.

According to VON SURY and FRIEDLEBEN the greatest weight of the thymus (27 g.), is attained at the end of the second year; while HAMMAR'S statistics place the maximum weight (37 g.), between the eleventh and fifteenth years. The latter view, which is more probably correct, is substantiated according to Hammar, by observations conducted by SODERLUND and BACKMAN. It was found that the height of the thymus curve was reached in dogs at the end of the fourth month of life, at the time when spermatogenesis begins. This period in dogs corresponds to the period of puberty in men (eleven to fifteen years).

In passing, it is interesting to note that HAMMAR believes the weight of the thymus gland as a whole is no criterion for estimating the amount of parenchyma of the organ, which is the functioning part. For example, at the ages of one to five years an average thymus weight of about twenty-three grams corresponds to a parenchyma of about twenty grams. At the ages of twenty-one to twenty-five years, the average weight of twenty-five grams has a parenchyma of scarcely five grams.

As far back as 1889, PALTAUF of Vienna called attention to the fact that status lymphaticus was responsible for sudden death from shock and immersion in cold water, and that the subjects of this condition bore chloroform anæsthesia badly. His writings acted as a stimulus to investigations in this field; until now numerous instances are on record.

PALTAUF reported the case of a twenty-year-old factory worker swimming with his companion in a stream, who suddenly shrieked, sank under water, and was brought up almost immediately a corpse. Autopsy showed a thymus ten centimeters long, one centimeter thick, five to six centimeters broad; contracted aorta, heart fairly large and pale. Lymph-glands and spleen enlarged and pale. Adenoid tissue of nasopharynx and base of tongue hypertrophied.

PALTAUF reported a case of NORDMANN'S somewhat similar to the one just quoted. A twenty-year-old recruit, went swimming before his mid-day meal. After a few minutes in the water he returned to the shore, had a chill, and fell to the ground, rolling his eyes. In spite of attempts to resuscitate him, the young man quickly died. Autopsy revealed dark fluid blood, oedema of the lungs, congested internal organs, hyperplasia of the thyroid, faucial and lingual tonsils, lymph-glands and spleen. The thymus was the size of a man's fist.

During the past year the writer has seen several reports of sudden deaths from the subcutaneous injection of diphtheria antitoxin, where the patients were said to be subjects of status lymphaticus.

Recently there have been a large number of autopsies in New York at the city morgue, upon workmen who have died of Caisson disease. In many of these, status lymphaticus was present. It is highly probable that status lymphaticus increases the liability to sudden death in compressed-air workers.

SUDDEN DEATH FROM ANÆSTHESIA.

Of great interest to the surgeon is the relation of status lymphaticus to death from the use of both general and local anæsthetics.

(1) BLAKE has reported seven cases, operated upon in Roosevelt Hospital in one year, who died during or shortly after ether narcosis, where the only discoverable cause of death was status lymphaticus. HART, mentions the following fatalities due to status lymphaticus in connection with the use of general anæsthesia:—

(2) Laquer's case, a fourteen-year-old boy, operated upon for the enucleation of an eye-ball.

(3) MICHL'S case, three-quarters of an hour chloroform narcosis; ear operation. Patient suddenly became asphyxic, Cheyne-Stokes respiration, death.

(4) PLOC saw a sixteen-year-old boy die suddenly at the beginning of narcosis.

(5) LECENE saw a man thirty-two years old, who, after incision of a bubo under general narcosis, suddenly died while apparently in the best of condition. Weight of thymus thirty-five grams.

(6) KATHOLICKY had a female patient forty-six years old, upon whom a herniotomy was performed under chloroform narcosis who died suddenly four days after operation, apparently from heart collapse. Dimensions of thymus 8x7x2 cm.

(7) W. J. MCCARDIE collected a series of thirty fatalities. The anæsthetic was chloroform seventeen times, ether six times, a mixture

of chloroform and ether five times. Two were doubtful cases, the anæsthetic being nitrous oxide gas.

(8) Under local anæsthesia three deaths have been recorded.

(a) HOROSZKIEWICZ, quoted by MCCARDIE—Tropocaine 0.075 gm. injected locally for the removal of a small cyst of the neck.

(b) T. J. HARRI'S case of tonsilotomy, cocaine anæsthesia. The operation was quickly performed. It was almost immediately followed by syncope and death. The patient was an adult. Autopsy revealed a thymus weighing eighteen grams.

(c) H. NETTEL'S case of a woman thirty-four years old, Schleich's infiltration anæsthesia for the removal of an exophthalmic goitre. Autopsy—status lymphaticus with enormous hyperplasia of the entire lymphatic apparatus.

(9) WARTHIN reported the case of a woman forty-one years old, who died suddenly during anæsthesia. Status lymphaticus. Persistent thymus—cardiac death. Microscopically "lymphoid exhaustion of lymph-nodes and spleen."

(10) ROBERT records the case of a twenty-three years-old woman who died three minutes after the administration of two drams of bromide of ethyl for the extraction of a tooth. Autopsy showed status lymphaticus, the thymus measuring $3 \times 2 \frac{1}{2} \times \frac{3}{8}$ inches.

(11) L. M. HURD performed an adenoid and tonsil operation upon a negro child two and one-half years old under ether anæsthesia, who was returned to the ward from the operating room in good condition. The child died suddenly twenty-five minutes after operation. Autopsy demonstrated a large thymus covering the whole anterior surface of the heart and great vessels, also hyperplasia of lymphatic system. The larynx, trachea and bronchi contained no evidence of blood clot.

These reports demonstrate conclusively that chloroform is the most dangerous anæsthetic to use if status lymphaticus exists. In adenoid and tonsil operations especially, chloroform should be avoided.

Notwithstanding the fact that many eminent authorities deny the existence of thymic asthma and thymic death due to mechanical pressure of the enlarged thymus gland upon the trachea; yet this undoubtedly occurs. JACKSON reported a case of thymic asthma which well illustrates this type. A boy four years old was brought to him for the relief of dyspnoea and stridorous breathing, steadily increasing since an attack of croup six weeks before. Tracheotomy failed to relieve the dyspnoea, it being necessary to pass a long tracheoscopic tube to get by the obstruction. By direct inspection the walls of the trachea were seen to be

collapsed from before backward. The performance of thymectomy relieved the dyspnoea permanently. The enlarged thymus gland was demonstrated by radiography before operation.

In view of the paucity of our knowledge concerning status lymphaticus, the following cases may be of interest. All but one are taken from the Bellevue Hospital Pathological Department records. I wish to acknowledge my indebtedness to DR. CHARLES NORRIS, the Director of this Laboratory, for permission to publish the following notes:

CASES OF STATUS LYMPHATICUS.

1. Italian child, seven months old. Brought to New York Post-Graduate Hospital because of dyspnoea and cyanosis. Second day of illness began to cough, and breathing became labored. Nurse in attendance suspected foreign body in air passages from actions of child. Third day auscultation revealed a few subcrepitant râles at bases of lungs. Temperature rose, and child died.

Autopsy. Broncho-pneumonia; dilatation of the heart; congestion of meninges; cloudy swelling of kidneys and liver; enlargement of inguinal, cervical, axillary, bronchial and mesenteric lymph-nodes. Thymus greatly enlarged. Dimensions: length two inches; breadth two and three-quarter inches; thickness three-quarters of an inch. Microscopic examination: Simple hyperplasia of thymus.

2. Boy, nine years old. Epidemic cerebro-spinal meningitis. Duration of illness two days. Status lymphaticus. Thymus enlarged, extending down almost to auriculo-ventricular groove. Spleen small. Lymphoid elements prominent. Peyer's patches and lymphoid follicles of intestines hyperplastic. Mesenteric lymph-nodes enlarged to size of almond. Hypertrophy of tonsillar ring.

3. Boy twelve old. Ill four and one-half days. Epidemic cerebro-spinal meningitis. Status lymphaticus. No axillary or pubic hair, pubes being covered with lanugo. Thymus enlarged, extending half way down over pericardium. Marked hypertrophy of lingual, pharyngeal and faucial tonsils. Aorta is narrow.

4. Male, age eighteen years. Epidemic cerebro-spinal meningitis. Patient unconscious when admitted to Bellevue Hospital. Only five days in United States. Large well developed subject. Lanugo on lips and face. Axillary hair scant. General rotundity of limbs. Thymus enlarged, reaching down to auricles of heart. Hypoplasia of aorta.

5. Male, nineteen years old. Epidemic cerebro-spinal meningitis. Death on fourth day of illness. Status lymphaticus. Suppurative pericarditis. Thymus enlarged, extending downward to pericardium. Pubic

hair of female type. Pulmonary valve has only two cusps. Retro-peritoneal glands enlarged. No lymphoid hyperplasia of spleen or intestinal tract.

6. Female child twelve years old. Epidemic cerebro-spinal meningitis; acute mastoiditis; acute parenchymatous nephritis. Status lymphaticus. Death on second day of illness. Thymus enlarged $12 \times 6 \times \frac{1}{2}$ cm. Weight thirty-one grams. Pubic hair undeveloped. Axillary hair absent. Well developed body. Inguinal, axillary and cervical nodes enlarged to size of almonds. Large adenoid. Hypertrophy of faucial tonsils. Aorta shows a dimple of the ductus arteriosus, with a prominent ridge above it, taking in half the circumference of the vessel, which is slightly stenosed. Both adrenals swollen and hæmorrhagic, the right measuring $5 \times 3 \times 1$ cm. Uterus 3 cm. long of which 2 cm. belong to cervix and 1 cm. to body.

7. Female, twenty-eight years old. Epidemic cerebro-spinal meningitis. Status lymphaticus. Duration of illness twenty-four hours. Persistent thymus, glandular on section. Mesenteric and retro-peritoneal glands hyperplastic, and as large as almonds. Superficial lymph-nodes and faucial tonsils enlarged.

8. Male, eighteen years old pyæmia. Death on eleventh day of illness. Status lymphaticus. Thymus enlarged, reaching to lower border of third rib. Staphylococcus isolated from blood during life. Multiple abscesses of lungs, suppurative myelitis. Poorly nourished subject; broad perineum. Small external genitals. Pubic hair female type. No axillary hair and none on chest. Bronchial lymph-nodes enlarged and suppurating. Peyer's patches and solitary follicles of small intestine are prominent. Mesenteric and retro-peritoneal glands enlarged.

9. Woman, twenty-three years old. Exophthalmic goitre. Status lymphaticus. No history obtained. Thymus enlarged. Weight thirty grams, completely covers pericardium. Small woman, fairly well developed. Pubic hair well developed. Retro-peritoneal lymph-nodes contain tubercular foci. Lingual and faucial tonsils enlarged. Marked hypertrophy of lymphoid follicles of pharynx. Mesenteric lymph-nodes enlarged. Thyroid and parathyroids enlarged.

10. Boy, five years old. Ill for one week; intubated on suspicion of diphtheritic laryngitis. Autopsy—status lymphaticus. Larynx normal. Thymus enlarged, weighing thirty-three grams. Peripheral lymph-glands are enlarged to size of large peas or almonds. Hypertrophy of faucial and lingual tonsils. Mesenteric and bronchial glands enlarged, the latter being slightly pigmented. No note made of collapse

of walls of trachea. This case resembles the type due to suffocation caused by mechanical compression of trachea by enlarged thymus gland.

PATHOLOGY OF STATUS LYMPHATICUS.

The gross lesions of status lymphaticus found after death, consist, as already stated, of hyperplasia of the thymus gland and lymphatic elements throughout the body.

The *hyperplasia of the thymus* is described by EWING "as usually being a simple hyperplasia of the lymphoid cells, enlarging and multiplying the follicles, sometimes causing the deposit of small nodules of lymphoid cells in the centres of the lobules, in the trabeculae, or even in the outlying adipose tissue." With the general hyperplasia of the lymphoid elements, BLUMER found a proliferation of the endothelial cells lying along the trabeculae of the organ. The thymus is occasionally fatty.

The *hyperplasia of the lymphatic system* is shown by enlargement of the cervical, axillary, inguinal, mesenteric and bronchial lymph glands, by hyperplasia of the faucial, pharyngeal and lingual tonsils. The solitary and agminated lymph-follicles in the intestinal tract are often hyperplastic and there is generally present an enlargement of the spleen, due to a similar hyperplasia of the lymphoid elements, accompanied by hyperæmia. On cross section the enlarged Malpighian bodies of the spleen stand out prominently from the surrounding pulp. There is occasionally an infiltration of the splenic pulp by the lymphoid cells. EWING has observed a hyperplasia of the lymphoid marrow of the long bones, and MCCARDIE an enlargement of the tongue, in addition to the hypertrophy of the lingual tonsil. I am inclined to think this observation of MCCARDIE an accidental finding, due to some other cause than status lymphaticus.

PALTAUF noted a lessening in the amount of hæmoglobin in the blood, while EWING in one instance observed a lymphocytosis of 76 per cent.

Anomalies of the heart and arteries are frequently present. Case two presented a pulmonary valve with but two cusps, while cases three and six showed hypoplasia of the aorta. This latter lesion produces a small pulse which may be detected clinically.

Anomalies of the thyroid gland are often found in people dying from status lymphaticus. WYNNE, quoted by MCCARDIE, reports a series of twenty cases, in all of which the thyroid was abnormal. In ten it was markedly enlarged. In the others it was of normal size, or but slightly enlarged. Microscopic examination showed marked changes in all twenty cases, either reduction or absence of the colloid material, with hyperplasia of the cells which grow into the alveoli.

WARTHIN observed hyperplasia of the parathyroids in one case of status lymphaticus associated with acromegalia. Among associated conditions, exophthalmic goitre probably ranks first in importance. CAPELLE, quoted by HART, states (1) among nineteen Basedow patients who died of intercurrent diseases, fourteen were thymus carriers *i.e.*, 44 per cent.; (2) among seventeen patients who died from Basedow's disease, fourteen were thymus carriers, *i.e.*, 82 per cent.

Other associated conditions are idiopathic epilepsy, acromegalia, myxœdema, rickets and Addison's disease. HERDINGER states that in a strikingly large number of cases he found Addison's disease in combination with status lymphaticus.

From a study of the cases already quoted, we see that status lymphaticus is a frequent cause of sudden death during anæsthesia, infectious disease, and from trivial shock, such as bathing, etc. In the cases of meningitis reported by the writer, death occurred early in the disease, distinctly modifying its course. DAUT, quoted by BLUMER, states that in a series of patients dying from diphtheria, over 25 per cent. had status lymphaticus. He says that "distinct modifications of the clinical picture of the disease (diphtheria) were present in these cases. In some instances the patients had a hoarse, barking cough, and a hoarse voice, associated with attacks of spasmodic suffocation, weakness of the heart and rapidity of the pulse. These attacks were altogether out of proportion to the severity of the membrane formation as shown post-mortem. In other cases the patients died suddenly, having shown no unusual symptoms during life referable to the status lymphaticus."

THEORIES OF DEATH.

There are three theories advanced to account for sudden death in status lymphaticus.

1. Theory of mechanical compression.
2. PALTAUF'S theory.
3. Theory of hyperthymization.

1. *Compression Theory.*—It has been proven that in rare instances the enlarged thymus gland may compress the trachea sufficiently to cause death by suffocation. The relief afforded by thymectomy is proof of this fact.

In this connection the thickness of the thymus is of more importance than its other dimensions, as the following figures of VON SURY show:

Average thickness of thymus—Newly-born, 1.1 cm.; child in 1 month, 1.4 cm. child in 11-19 months, 1.5 cm.

Average sterno-vertebral distance—Newly-born, 1.6 cm.; child in I month, 1.7 cm.; child in II-IX months, 2.0 cm.

Thus we see that at the superior aperture of the thorax there is normally only a space of one-half cm. between thymus and the bony walls of the chest, measuring from before backward. Forcible extension of the head decreases this distance. In rickets this sternovertebral distance is apt to be small, owing to the frequent occurrence of lordosis.

2. *PALTAUF'S theory*.—PALTAUF believes that the hyperplasia of the thymus and lymphatic apparatus is due to an intoxication of the organism caused by faulty tissue changes, or by such common causes as infection and hereditary syphilis. The nerve centres governing the movements of the heart become affected, and a lessened resistance of the individual toward harmful external influences is induced. Under such circumstances the heart may suddenly become incapable of functioning.

3. *Theory of hyperthymization*.—There is thought to be a pathological increase of the internal secretion of the hyperplastic thymus, which renders the organism more susceptible to external influences. According to HART, BARBAROSSA states that thymectomized animals are capable of offering considerable resistance to chloroform poisoning, while animals and men with persistent thymus glands succumb to small amounts of this drug. Further, the theory of hyperthymization is substantiated by the findings in Basedow's disease.

WIESER holds that the hypoplasia of the chromaffin system found in status lymphaticus is responsible for a diminution in the tonicity of the vessel walls and cardiac muscle. Thus sudden death from arterial and cardiac atony and dilatation may occur.

MODE OF DEATH.

In the cases of death during anæsthesia collected by McCARDIE, that observer reports that death always occurred suddenly. "In certain cases facial pallor and dilated pupils were first noticed, and then it was found that cardiac action had stopped. In others respiration was observed to become superficial and intermittent, and at the same time the pulse was impalpable; in others cyanosis first appeared together with dyspnoea, the circulation quickly failing afterwards. In another type of case there was a sudden failure of circulation and respiration, apparently simultaneously." The heart and right ventricle were usually found dilated. The ages of the cases in McCARDIE'S series varied from six months to fifty-five years.

DIAGNOSIS OF STATUS LYMPHATICUS.

It is a deplorable fact that none of the cases of status lymphaticus, dying under anæsthesia, have been diagnosticated before autopsy; yet the diagnosis can undoubtedly be made if the condition is borne in mind, and the patient properly examined.

Status lymphaticus should be suspected in an individual who gives a history of one or more sudden unexplained deaths in other members of his family. HEDINGER reported the sudden deaths of five children in one family, before they reached the age of six. Autopsy on one of them showed a large thymus and status lymphaticus.

Individuals with status lymphaticus often have a pasty skin, a large amount of subcutaneous fat, and may show evidences of old or recent rickets (Conner). There is a general rotundity of the limbs, which is very characteristic, and which was noted in case four of this series. Adults often show an absence or scanty condition of the axillary and pubic hairs, which, together with the hair of the head, may have a peculiar dry, brittle character. In adults signs of infantilism may be present, characterized by small external genitals of an infantile uterus.

There is generally an enlargement of the external lymphatic glands, axillary, cervical and inguinal, accompanied by hyperplasia of the faucial, pharyngeal and lingual tonsils. The spleen may also be enlarged and palpable.

MCCARDIE states that "signs of low blood pressure may be associated, *e. g.*, pupils comparatively large, a low tension pulse, heart sounds thin and flabby, giving one the idea of thin-walled, dilated cavities and of small muscular power." If the blood pressure is low, it can be detected by the Janeway Sphygmomanometer. A finding of a lymphocytosis or diminution of the hæmoglobin of the blood would aid in the diagnosis.

Inspection of the chest may possibly show a pulsating tumor above the sternum, when the thymus is greatly enlarged, or this tumor may be palpated by the finger of the examiner.

PERCUSSION.

Light percussion with the finger should be employed. WARTHIN says: "The area of thymic dullness is triangular, with unequal sides, the base at the level of the sterno-clavicular articulations, and the blunt apex behind the second intercostal space or the upper part of the third rib. The side boundaries extend somewhat beyond the sternal lines, usually more to the left than to the right. An area of dullness

extending more than one centimeter beyond the sternal lines may be taken as evidence of an enlarged thymus."

In a case of thymic asthma, during the attack, we obtain the picture of a child suffering from inspiratory dyspnoea. The respiration is noisy and stridorous in character. There is retraction of the supraclavicular and intercostal spaces. The child is very restless and perhaps cyanosed. No history of a diphtheritic infection is obtainable. Examination of the larynx is negative, but tracheal stenosis is demonstrable by a long tracheoscopic tube (JACKSON).

The most certain and only reliable method of diagnosis is radiography. WARTHIN states "that the radiogram of the normal thorax of an infant shows in the median line a flask-shaped shadow having a narrow neck and plump body, the neck portion of the shadow reaching from the first or second dorsal vertebra to the fifth or sixth. The body of the flask corresponds to the cardiac shadow, while the neck shadow—the lateral boundaries of which only slightly exceed those of the vertebra—is the shadow of the thymus and great vessels. Under pathological conditions, *i. e.*, with hypertrophy of the thymus, the neck portion of the shadow broadens." WARTHIN has well shown this by radiograms.

RESUME.

1. The thymus gland is probably an epithelial organ with an internal secretion.
2. The diagnosis of status lymphaticus as a cause of death is made too frequently. HAMMAR'S statistics show that the thymus gland is normally much larger than is generally supposed.
3. Mechanical tracheo-stenosis undoubtedly exists as a cause of death in rare instances.
4. The usual cause of death in status lymphaticus is probably a "hyperthymization" of the organism, which renders it peculiarly susceptible to harmful external influences, such as shock, anæsthetics and infectious disease.
5. The diagnosis of status lymphaticus can undoubtedly be made *intra vitam*. The X-ray offers the most certain and reliable means of determining the presence or absence of an enlarged thymus gland.
6. If status lymphaticus exists, chloroform is the most dangerous anæsthetic.—*New York State Journal of Medicine*.

OBSTETRICS AND GYNÆCOLOGY.

Calcium Lactate in Post-Partum Haemorrhage.

BY

A. W. AUSEMS.

Six cases, multiparæ, who had suffered more or less from hæmorrhage in previous confinements, were given daily doses of 3.0 grammes (45 grains) of calcium lactate for a period varying from some days to several weeks before delivery. In all cases hæmorrhage appeared to be less than normal, but the author is not satisfied as to the success of the treatment. In a girl of thirteen years, however, suffering from metrorrhagia which had refused to yield to hydrastis or ergotin, calcium lactate arrested the discharge in three days.—*The Canadian Practitioner and Review*.

Fifty Hours' Delay between Births of Twins

DR. C. J. HILL-AITKEN publishes in the *Transvaal Medical Journal* an interesting case in which natural delivery of the second of twins occurred after a fifty-hours' delay. A native woman was delivered of a child at 12 noon on a Thursday. After the birth, labour pains ceased and did not return. The relatives waited patiently until the following afternoon, and then decided to seek European medical advice. The author was sent for, and was told that while active interference was, if possible, to be avoided, his advice would be welcomed. Reaching his patient about 7.30 P. M. the same evening, he found that while no labour pains were complained of the uterus was active, as it could be felt alternately hardening and softening under the hand. The child was alive and active in its movements. Internal examination showed that there was no hæmorrhage from the uterus or from the cord of the first child, that the bag of membranes was unbroken, and that the head of the child was lying at the pelvic brim, which was wide and unobstructed. On explaining these facts to the relatives, the author was pleased to find that they were willing to await the onset of the second labour, as he did not wish to apply high forceps or to perform version in a native hut with scanty hot-water supply and no table on which to place his patient. He also preferred not to take the risk of rupturing the membranes, although such a proceeding might have hastened matters. After putting the patient on drachm doses of elixir aletris, four-hourly, and recommending the frequent cleansing of the external genitalia, he left. Labour set in the following morning at 4.30 A. M., and the second child was born at 11 P. M. There was thus an interval of fifty-one hours between the birth

of the first and of the second child. The author considers that the case may be considered one of natural delivery despite the administration of aletis, for the womb was by no means inactive when examined. Both mother and children were well ten days after delivery.—*The Hospital*.

Treatment of Eclampsia.

THAT uræmia, or eclampsia, is caused by the retention in the blood of the salts (principally sodium chloride) which the damaged kidneys are unable to throw out in sufficient quantity is the conception upon which Dr. JACOBSON bases his treatment for eclampsia, described in the *American Journal of Obstetrics*. Since retention of salts raises the molecular concentration of the blood, and at the same time its specific gravity, he aims at reducing this concentration to somewhere near the normal; when this is accomplished the patient will, he says, at least temporarily recover. For securing this object there are only two available methods: starving the patient and diluting the blood by adding water. In pursuit of the former object he withholds all food for three days, allowing nothing but water, plain or aerated. This is inadequate as a means of diluting the blood, because comatose patients cannot drink and those who are not comatose may refuse it. So the author resorts to rectal injections; he finds that plain water creates irritation, and normal saline is inadmissible as illogical and dangerous. Sugar was selected as the best substitute for salt on account of its high molecular weight. Continuous rectal irrigation by the drop method with sugar solution (strength not stated) has been tried with marked success in several cases, two of which are reported in full, and the specific gravity of the blood falls markedly during the treatment. The other common methods are not neglected, however; veratrum viride is given hypodermically, hot packs and purges are freely ordered, and later on a salt-free diet is prescribed. It is suggested that the treatment is harmless and worthy of further trial, but the author wisely avoids premature claims to the discovery of an infallible remedy for this often intractable disease.—*Ibid*.

Asphyxia Neonatorum.

THE birth of a child in a condition of suspended animation is a common occurrence and often requires prompt treatment. Many infant lives are lost annually through an insufficient recognition of this, especially in those cases in which the child is pale when born instead of cyanosed. It is usual to classify these cases according to the appearance of the child. If it is blue and its heart is beating strongly, it is known as asphyxia livida; if it is pale and the

heart-beat is only just recognisable, we call the condition asphyxia pallida. The former is much more common, and of course is due to imperfect blood aeration during the last few minutes of labour. It is caused by any condition which interferes with the complete interchange of gases in the placenta between the maternal and the foetal blood. The most important cause is, therefore, premature separation of the placenta, such as occurs in antepartum hæmorrhage and in breech cases, where the head is delayed in the lower uterine segment or the vagina. In the latter condition the upper contracted portion of the uterus may separate the placenta before the head is delivered. Pressure on the cord is the time-honoured explanation of those cases, but is not in reality so frequent an occurrence. The cord can only be compressed between the foetal head and the pelvic brim, and the relative shapes of these two structures is such that there must be plenty of room for the cord all round except opposite the promontory of the sacrum or the pubic symphysis. Stretching of the cord when wound tightly round some part of the foetus may lead to such a narrowing of the lumen of its vessels as to interfere with the circulation. Tonic contraction of the uterus is an uncommon cause, but acts by emptying the placental vessels on account of the continuous pressure which it exerts. Premature efforts at respiration, such as we see sometimes in breech cases, leads to the inspiration of blood mucus and liquor amnii into the foetal bronchi, and consequently asphyxia supervenes as soon as the placental circulation ceases, because inspired air is thereby prevented from reaching the air vesicles. This cause is more likely to become operative after birth, for if the placental circulation is intact it makes no difference whether the bronchi are blocked with fluid or not. In blue asphyxia the skin is characteristically coloured, the skin reflexes are preserved, and the heart-beats can be seen, as well as felt, through the chest-wall.

Asphyxia pallida, on the other hand, is a much more serious condition, and its causation is not always the same. In some cases it is really the final result of a condition of deficient blood aeration due to the same causes as those mentioned for blue asphyxia, the pallor of the skin being due to a failing circulation with a general lowering of the blood pressure. This, however, is not always the case, for white asphyxia may occur in deliveries in which there is no interference with the circulation. For instance, it may occur in difficult forceps deliveries in vertex presentations, in which case the circulatory failure is primarily due to some injury or interference with the cardiac and respiratory centres. The pale skin is then due to emptying of the vessels by the general compression which the foetus undergoes during delivery,

the feebly acting heart being unable to fill them up again at once. In such cases the blood collects in the abdominal organs, the portal area in particular, and the condition is closely allied to shock such as occurs after serious operations and long anæsthetics in adults. In such circumstances the child is colourless, the muscles are all relaxed, the skin reflexes are entirely lost, and the heart beats so feebly that it may only be recognisable by auscultation. The heart must beat, however, for the condition to merit the term asphyxia pallida, for if the heart has ceased to beat the child is dead.

The treatment of these two forms of asphyxia is very different, on account of the feeble circulation and loss of reflexes in the pallid form. Indeed, it is a fact that most infants in a condition of blue asphyxia with a vigorous heart-beat will recover by themselves if left alone. The venous blood circulating through the brain is usually sufficient to excite the respiratory centre and cause efforts at respiration. It is not advisable, however, to leave such infants alone, for if respiration is not easily and quickly established, treatment may be applied too late to bring this about. It is not necessary to hurry the separation of the infant from the placenta, but the first effort should be made to clear the mouth and throat of any fluids which may have been sucked in. It is rarely necessary to attempt to remove fluid from the bronchi, but if the infant has been seen to make efforts at respiration before delivery, this should be done. It is simple to pass a soft catheter through the larynx into the trachea and then apply gentle suction, or to blow a little air into the trachea with a ball syringe. This may have the effect of displacing the fluid, which will then flow out into the mouth. This procedure may, however, do harm unless carried out with great gentleness, for the air vesicles may be ruptured in the process and emphysema may thus arise. As a rule all that is necessary is to wipe out the mouth and throat, holding the child up by the feet to assist the outflow of fluids. After this the skin of the infant may be stimulated by rubbing the back with a towel, or sprinkling a little cold water on it. If no response follows this treatment, the cord should be tied and cut and the child immersed in a warm bath and a cold bath alternately. As a rule respiration is started by these measures, but if it is not, artificial respiration must be resorted to without further delay.

In the pallid form it is useless to attempt to reflexly excite the respiratory centre because all skin reflexes are lost, consequently artificial respiration must be used at once. It is better, therefore, to tie and cut the cord immediately, and place the child in a warm bath. The reason for the bath is that the failing circulation allows of rapid cooling of the

skin, and this can be prevented by applying artificial warmth. Artificial respiration can be carried out whilst the child is in the bath, if Sylvester's method or chest compression is the method made use of. In fact, these are the only means which can be used whilst the child is in a bath, unless we employ Laborde's tongue traction method, which has never been much used in this country. In future, probably, Schafer's new method will be employed for these infants with better hope of success, provided the child can be kept warm by surrounding it with flannels and placing it face downwards upon an India-rubber hot-water bottle. A warm rectal injection of an ounce of saline solution with five minims of brandy may occasionally help to stimulate the heart-beat. It is important to remember that artificial respiration should be used in such a way as not to interfere with any spontaneous efforts of the child to breathe; in fact, if the child does make spontaneous efforts, it is better to leave off artificial respiration. When respiration is established, the child should be kept very warm, and carefully watched so that any secondary respiratory failure may be at once dealt with.—*The Hospital*.

THERAPEUTICS.

High-frequency Currents for Diabetes.

DR. J. M. LIEBERMANN, of New York, has carried out the treatment of glycosuria by means of high-frequency currents in large numbers of cases, and has obtained success in a considerable proportion. He supposes that the glycosuria is connected with a hyperæmia of the blood-vessels to the liver, and he attempts to counteract this hyperæmia by acting upon the sympathetic system with the electric current. He makes the applications, therefore, in the epigastric region immediately over the coeliac plexus, semilunar ganglia and splanchnics, directing the current from left to right. The applications are made for 10 to 15 minutes at sufficient intervals to prevent exhaustion. As a result of these applications the patient has a feeling of well-being, and the chief symptoms of the disease—polyuria, thirst, and polyphagia—soon commence to diminish. At the same time there is a decrease in the amount of sugar excreted, and the general condition of the patient improves. The duration of the treatment should extend over six months to a year. Of 144 cases so treated he has had 62 relative failures, which he ascribes in a large measure to insufficient treatment. Even in these 62 cases there was almost always a diminution in the glycosuria, and an improvement in the general condition and an increase in body weight.—*Ibid*.

OPHTHALMOLOGY.

Therapeutic value of Diaphoresis in
Treatment of Ocular Diseases.

A. BRAV believes that diaphoresis is of value in the treatment of ocular diseases for the following reasons:

(1) It enhances and readjusts the metabolic end-products and eliminates the deleterious toxic substances from the organism; (2) it tends to re-establish the equilibrium in the general circulation, removing all possible venous stasis, and purifies the blood itself by the elimination of circulating toxins, following the stimulation of the sweat glands and the direct effect on the vascular system; (3) it invigorates the peripheral and central nervous system, thus increasing the nutrition of the ocular tissue affected; (4) it acts on the lymphatics, stimulating absorption and thus carrying off the inflammatory products of the diseased part of the eye; (5) the local stimulating effect of moist heat is very important to the tissues in inflammatory processes.—*The American Journal of Ophthalmology*.

Dionin in Corneal Opacities.

Report of a case with Remarkable Restoration of Vision.

BY

SAMUEL HORTON BROWN, M.D.,
PHILADELPHIA.

Since the preparation known as dionin (ethylmorphin hydrochlorid) was first introduced into ophthalmic therapeutics by DARIER as early as 1900, very remarkable effects have followed its use. While it was first used as an analgesic in painful affections of the anterior segment of the eye with very gratifying results, it was also found to be most efficacious in infiltrations of the cornea from one cause or another, and especially valuable in interstitial keratitis. As the use of the preparation became more popular, reports poured in from all sources regarding its several properties and scarcely an ophthalmologist in the world resisted the opportunity to make some contribution concerning the same. This resulted in the collective observation that the drug was of great value in clearing up recent opacities of the cornea and of greatly influencing opacities of more or less remote origin, in addition to its undisputed property of lessening pain in affections of the anterior segment of the eye.

The reckless manner in which the preparation was studied by some of the workers in this field tended to attribute to the drug properties of a most remarkable character which on careful study were shown not to

exist. This in a manner cast some discredit upon the drug. However, the consensus of opinion at the present writing is that it is of great value as an analgesic in ocular affections and of doubtful value in the clearing of corneal opacities. Its judicious use is certain to be followed by good results. It is commonly used in a five per cent. aqueous solution but may be used in powder or ointment form. Those unfamiliar with its action will be very much surprised to note the intense congestion and œdema of the conjunctiva that immediately follows its use and lasts about forty minutes. After several days' use, this phenomenon grows less and less pronounced and gradually ceases altogether.

As already mentioned, the use of dionin is quite commonplace and the results following its employment are well-known but it is the purpose of this paper to merely record a truly gratifying effect after a long period of markedly reduced vision. It illustrates the necessity of persistence in the treatment of individual cases.

The patient in this instance was a young woman about 28 years of age who had been a patient in the Wills Hospital for an inflammation of the cornea when she was about ten years old. After a rather lengthy sojourn she was discharged and glasses were ordered to correct the deficiency in vision. These were not entirely satisfactory, and after a few years, in despair, she consulted several oculists and opticians and eventually obtained lenses that afforded her comparative relief. These proved to be crossed cylinders.

At the time she consulted me she had been suffering from intense headaches for several months, and was certain that her sight was diminishing. This was 18 years after the original corneal trouble. She had reported at the Wills Hospital a day or two before, but after a very careful examination she was informed the only relief which could be offered her would be in a change of glasses. When she first presented herself to me, both eyes were found to be the sites of pronounced, apparently superficial opacities of the cornea, the right being involved to a greater extent than the left. The other media were clear and the fundi normal. One drop of a five per cent. solution of dionin was prescribed to be instilled twice daily in the right eye, the worse eye, for a period of ten days. At the end of this period the vision was found to be R. 5/22.5, L. 5/60. At the end of another month of the same treatment the vision was R. 5/12, L. 5/45. The dionin was discontinued in the right eye and employed in the left eye twice daily. At the end of two weeks the vision was R. 5/12? L. 5/20. Two weeks later the vision was 5/9? 5/9? and has remained so ever since.

Comparing this result with the original vision and taking into consideration the duration of these opacities without any attempts being made to resorb them, the course of the condition under treatment is very remarkable. The vision will probably be further enhanced by the wearing of correcting lenses.—*The American Journal of Ophthalmology*.

Prognosis of Diabetic Cataract.

F. DE LAPERSONNE states that, since diabetes modifies the tissues, making them more liable to infection and prolonging healing, the general condition of the patient should be improved as much as possible before operating for cataract. He has seen the wound reopened five weeks after it had apparently healed. Other complications which he has seen following cataract extraction in diabetics are hypostatic pneumonia, and post-operative psychoses. These complications are especially liable to happen in diabetics who usually combine the baneful factors of age, autointoxication and atony of the intestines. In one of his patients some time after the operation neurasthenia developed, accompanied by transient delirium, and the patient, refusing to adhere to diabetic regulations, died in diabetic coma. While these complications do occur, they are, however, rare, and as a rule excellent results are obtained with proper care. It is important to study these patients carefully and it usually is wise to perform a preliminary iridectomy, redoubling the precautions at the time of operation and afterward.—*Ibid.*

PÆDIATRICS.

The Drugless Treatment of Pneumonia in Children.

BY

CHARLES DOUGLAS, M.D.

Professor of Pædiatrics

AND

WILLIAM M. DONALD, M.D.

Professor of Internal Medicine, Detroit College of Medicine.

From a statistical standpoint institutional work has many advantages. The possibilities of uniformity in diet, in nursing, in the administration of baths and in general therapeutic measures will be apparent to everyone, and hence in such work statistics may be most readily secured. For the past eighteen years the children at the Protestant Orphan Asylum, in Detroit, have been under our care, and for the past twelve years accurate records have been kept of the maladies of these children. Their numbers have varied from 70 up to 125. For the past

ten years the numbers have never gone below 100, and usually have been about 125. In the period stated, namely, twelve years, during which accurate records have been kept, there have come to us the usual number of pneumonic cases during the pneumonic season. We have had frank lobar pneumonias, apical, basal and root, and likewise broncho-pneumonias of varying degrees of severity, subsequent to whooping cough, measles and grippe. During this period we have carried out a system, which, commencing in a vague, uncertain way, gradually crystallized itself into a well defined plan of treatment. During the twelve years we have had sixty cases of pneumonia. Of these, 15 or 25 per cent. were of a mild type, and under ordinary circumstances would demand practically no medicinal treatment. The other forty-five represented all more or less severe types of the disease. They were about equally divided between the lobar and bronchial types; the lobar being a primary disease and the bronchial almost always secondary to measles, whooping cough or grippe.

During this period of twelve years all of our cases, severe as well as mild, have been treated practically without drugs. This was attempted in a somewhat timid way at first, but the crystallization of our purpose was rapidly accomplished through the excellent results achieved by our first attempts. In twelve years we have had sixty cases of pneumonia with one death, a mortality of less than one-half of one per cent. This result, it seems to us, even in institutional treatment, is quite remarkable.

It were better here that some qualification were given to the statement that these cases were treated without drugs. When such a statement is made, the impression which it is desired to convey is that there were no definite drug measures adopted beyond what was necessary for the relief of unpleasant, distressing or dangerous symptoms. The whole line of expectorants, febrifuges and alteratives were entirely discarded, both in the lobar and bronchial types. The rule has been that as soon as the case is diagnosed, the child is sequestered in the Infirmary belonging to the institution, which consists of two large, bright, sunny, airy rooms; well heated; in a quiet portion of the building; away from all noise and disturbing influences. The child at once receives a warm bath and is put to bed, either with or without applications of some kind upon the chest. During DR. DOUGLAS' term of service all chest protectors or poultices were discarded, while during the term of DR. DONALD it has been customary to apply them. There was a friendly difference of opinion here in regard to this line of treatment, of which more will be said anon. The cold air treatment was considered, only to be immediately forbidden, and all the children were kept constantly, as near as

possible, at a temperature of 65 to 70 degrees day and night. The object desired was to secure not any special degree of temperature, but a uniformity of temperature, whatever it might be; and the feeling has grown that any degree of temperature is consistent with good treatment, providing that degree be maintained uniformly. However, with children from two to fourteen years of age, as are ours, many of them restless at night, kicking off the clothes, exposing themselves to the ordinary room temperatures, arising from the bed to go to the toilet room, crawling from bed to play during the nurse's absence or during their own convalescence, it has been deemed wise that the temperature be kept at a safely warm point. This decision we have never had any reason to change. It seems grateful to the patients, pleasant to the nurses, and safe to the physicians.

After the child has had a warm bath and is snugly tucked into bed, with or without his chest dressings, the temperature is taken at regular intervals of three to six hours, and upon showing any disposition to rise above 102 or 102-1-2 the child is immediately given another warm bath. This simple hydrotherapeutic measure is ordinarily all that is necessary to obtain a safe degree of temperature in the child. Should, however, the nurse be too busy, or should hot water not be available, or should any other occasion intervene so that it might be impossible or inconvenient to give the child a hot bath, the nurse is allowed to substitute one or two grains of phenacetin, or other coal tar product, or a few minute doses of aconite, in order to moisten the skin and reduce the temperature. Beyond this no other drug is given, except that in cases of severe cough, small doses of heroin or paregoric are administered, and in cases of sleeplessness, DOVER'S Powder or mild bromide mixture are permitted. Careful attention to the bowels and kidneys and skin is always insisted upon. The diet is liquid or soft, nutritious and palatable, and easily digested. Milk is a basis, and cereals, fruit juices or meat juices are allowed, depending upon the desires of the patient, and upon the capacity of the institution.

Should occasion arise in the course of a broncho-pneumonia, expectorant mixtures are ordered, and should there come, as there has come in several cases, periods of profound depression and cardiac asthenia, recourse is had to the most vigorous stimulation of the heart and vital centres. Strychnia, quinine, digitalis, and the mild bitters have all been used. When they are demanded they are pushed if necessary to the limit. The occasion which would demand such a line of treatment arises exceedingly seldom. Ordinarily during the course

of the disease neither this nor any other drug is given except as has been said before, to meet some special indication.

Much stress is laid upon dietetic measures. For the first few days of the disease the child can take practically nothing, but after that every effort is made to induce it to take nourishment in some form agreeable to it. The desires of the child are always consulted, inasmuch as we know that, where a desire is, digestion is likely to follow. Food which is disliked by the child becomes often nothing more nor less than an irritant, or a toxic insert, and consequently it has always been impressed upon the nurse that the child should be fed what it reasonably desires, and what it can digest perfectly.

Upon the hydro-therapeutic measures we place the most dependence. The stimulation of the skin and the vital nerve centres, the sedation of the nervous irritability, the soothing of the wild delirium, and the production of quiet sleep we accomplish largely by this simple physical measure. Care of the emunctories we likewise consider of the utmost importance, and rigid rules are laid down to secure free elimination. Quietness and rest and sleep are secured through the quietness of the room and through the warm bath. Quietness we consider of great importance. All sources of extraneous irritation or over-stimulation we deprecate and remove. The room is dark or partly shaded, strong lights are excluded, the nurse moves softly, the child is handled gently. The alcoholics are never given except occasionally during convalescence when the vital forces show only too slight a tendency to recuperate. It would seem from physiological experiment as if alcoholics were always, or almost always, contra-indicated in this disease.

In regard to local applications to the chest, to which reference was made in the early part of the paper, there has been, as has been said, a friendly difference of opinion between the two members of the staff. DR. DOUGLAS has objected uniformly to covering or dressing in the shape of poultices or bandages to the chest, arguing that little was gained by such measures and much lost, that the patient was disturbed by having the dressings changed, and that the examination of the chest by the physician was always interfered with. The argument which appealed to the other member of the staff, DR. DONALD, was the soothing and comforting influence which was secured by such measures, with possibly some concession to ideas which have been in existence for many years. Arguments have been advanced *pro* and *con* upon this subject by many physicians and in many medical journals. A settlement of the question seems as far removed as ever. Our patients recovered with the applications and without them; and we find it impos-

sible to say whether the use of such applications has been of value, other than as a salve to the fears and anxieties of the relatives or nurses. It would seem as if where there is much pleuritic pain, such application might be of service; and it would appear as if these might be discarded entirely where there was no such indication. It is a question of comfort rather than a question of cure. Where applications have been ordered, either the quilted or cotton flannel jacket, or the ordinary kaolin preparations, have been used. These latter have been selected in preference to the old-fashioned linseed poultices, on account of their ease of preparation and infrequency of application, a change being made only once in every twelve hours.

This constitutes in its simplicity what may be called the drugless treatment of pneumonia.

The type of child which we handle in an institution of this kind is ordinarily below the normal level of physical vitality. We take them as boarders and take them to adopt. They come of poor parents, who have often fed them improperly, and who have surrounded them with totally unhygienic conditions. Naturally they are often not in the best of health when they come to us, and they likewise often are not in the best of health when attacked with pneumonia. Even with these adverse conditions confronting us, we have been able in this institution, by care in nursing, by the conservation of every particle of the patient's strength, by the elimination of all poisonous products from the patient's body, and by the elimination from our treatment of anything that might disturb digestion or metabolism, to secure the admirable result, which our statistics show. Our object is to demonstrate how much can be done without the administration of drugs. In pneumonia, particularly in the lobar type, drugs have little place, while in the bronchial type, infinitely less drugging than has been customary in past years may be done to the great benefit of the patient.—*The Canadian Practitioner and Review*.

Constipation in Infants.

BY

ERIC PRITCHARD, M.A., M.D.

The important of the many causes of constipation may be classified as follows:—

A. Organic impediments to peristalsis.

- (1) Congenital malformations.
 - (a) Atresia recti.
 - (b) Imperforate anus.
 - (c) Dilated colon.

(2) Acquired structural alterations.

- (a) Dilated, convoluted or lengthened colon from over-feeding or flatulent distension.
- (b) Inflammatory condition of
 - (i) Peritoneum (Peritonitis).
 - (ii) Bowel wall (results of long-standing colitis or dysenteric diarrhoea).
- (3) Mucous Membrane (inspissated mucus in chronic colitis).

B. Interference with nervous mechanism of peristalsis and defecation.

- (1) Organic (meningitis, hydrocephalus, tumours of brain and spinal cord).
- (2) Toxic condition.
 - (a) Specific infections (fever, &c.)
 - (b) Specific poisoning due to drugs (opium, lead, excess of lime water, &c.)
 - (c) Intestinal toxæmias due to decomposition of food in the bowel.
- (3) Exhaustion of nerve centres due to over-stimulation by—
 - (a) Diarrhoea.
 - (b) Purgative drugs.
- (4) Interference with the peripheral nervous mechanism by—
 - (a) Hyper-sensitiveness of anal sphincter (fissure of anus).
 - (b) Anæsthesia of sensitive zone of rectum (by enemata, suppositories, presence of foreign bodies, &c.)

C. Faults in the intestinal contents—

- (1) Insufficient food (starvation, vomiting).
- (2) Deficiency of food (dehydration of tissues by fevers, loss of blood, want of bile, and intestinal secretions).

The treatment of constipation in infants may be summarised as follows:—

- (1) In all cases the existing cause such as deficiency or excess of food or qualitative faults must be treated by appropriate means.
- (2) The motions may be softened by—
 - (i) Free doses of petroleum emulsion which is made up as follows:—

R. Petrolei Liquid Puri m. xx.
 Pulv. : acacie grs. x.
 Oleum Amygdalæ amaræ m. $\frac{1}{8}$
 Elixir Glusidi m. $\frac{1}{2}$
 Aqua Cinnamomi ad ℥i
 Ft. emulsio.

For an infant 3 months old, as much as an ounce or as little as one drachm, may be given in divided doses during 24 hours.

(ii) In aggravated cases by small doses of drugs which promote intestinal secretion and the outflow of bile.

(3) Inertia of the bowel may be treated by (1) massage or massage combined with electricity, and (2) in aggravated cases by *cascara sagrada* and *nux vomica*.

(4) In cases of chronic colitis complicating the condition, a preliminary course of irrigation may be employed.

(5) In cases in which the motions are light coloured and offensive, liquor pancreaticus may be added to the petroleum.

(6) In all cases regularity of habit must be enforced by careful and systematic training—(*Abridged by John Daivasigamony.*)

TOXICOLOGY.

The Treatment of Opium Poisoning.

This must be regulated by the condition of each individual case, with respect to the time of swallowing the poison, if it has entered the body by the mouth, or of injection when it has been used hypodermically. In the former case the siphon tube must be used with free lavage of the stomach, first with simple water, and then with warm water in which 10-15 grains of potassium permanganate to the pint of water are dissolved. This line of treatment by permanganate was first suggested by DR. BARBER SMITH, in 1884. There can be little doubt from the experiments of MOOR upon himself with this salt, having taken on two occasions 3 and 5 grains of sulphate of morphia respectively, followed thereafter by 4 and 8 grains of permanganate within a few seconds after the morphia, and no harm resulting, and from his observations on the result of this treatment of 35 cases of opium poisoning with success, that permanganate of potash oxidizes the alkaloids of opium into harmless compounds. . . . While permanganate may therefore be expected to neutralize any opium or morphia upon which it can act in the stomach, it will be necessary to combat the toxic effects of that portion which has been absorbed and from which the symptoms present arise. For this purpose $\frac{1}{16}$ to $\frac{1}{8}$ of a grain of atropin sulphate may be injected hypodermically in the adult, and from $\frac{1}{16}$ to $\frac{1}{8}$ of a grain in infants, with a gradual increase in dose in children and young persons up to the amount first named. . . . In all cases of poisoning the bodily heat must be restored by suitable measures, and it is not wise practice to subject a patient to too vigorous or prolonged muscular exercise. In the immediate absence of a siphon tube, emesis should be promoted and encouraged by the readiest emetic, and stimulation by the use of strong coffee. When the heart's action appears to be failing, injection of ether under the skin or alcohol *per rectum* is called for. In infants a soft rubber catheter, with enlarged eyes, may be utilized as a siphon tube, with any kind of funnel which is convenient.—*Folia Therapeutica.*

THE ANTISEPTIC.

AUGUST, 1910.

Exercise and Exhaustion.



THE primitive savage was probably never led to think of physical exercise as necessary to health; it was part of his means of procuring the bare daily necessities of life. Civilized man, on the other hand, has gone on developing his intellect more or less exclusively so far that he now and then remembers he is the possessor of a musculature that demands from him a certain amount of attention every day of his life. He has consequently invented the term "physical exercise" and he permits a few of his numerous muscles to make some movements to satisfy himself. Or, what is worse, he relegates the exercise of these necessary functions of the muscles to the athlete or the playful school-boy! Giant frames with poor brains are being succeeded by giant intellects with poor limbs. The dumb-bells and the Indian clubs have become household gods where useful spears and bows and arrows had reigned. What was once part of the daily round of habits with the savage has come to be sought for by civilized beings as something foreign though essential to health. Who would wonder if "massage" and "electrical stimulation" will, in course of time, do duty for the voluntary exercise of the muscles!

Let us now consider very briefly some aspects of what are known as "Exercise" and "Exhaustion."

By "exercise" is ordinarily meant muscular exercise. In the unrestricted sense it is permitted to mean intellectual exercise also. But why only these two forms? Do not the other tissues and organs of the body require to be exercised with regularity, for the management of all the functions of the body? There is the liver tissue, the bony tissue, and various others that have to be exercised daily, nay, somewhat incessantly, in order that life may last.

When we think of it more deeply we find that the muscular tissue which forms the great bulk of the average human being, is distributed almost in every part of the body and is found in close proximity to most of the organs. Consequently, exercise of these muscles will, in some measure, stimulate the activity of the subjacent organs and tissues by means of the direct mechanical

compression and relaxation. An active muscle, further sucks into it and pumps out of it an accelerated current of blood to meet the increased demand for nutrition, and to remove the fast accumulating waste products. Now, the circulation of blood in the body being a complete circuit, it follows that if any one part of the main current is forcibly accelerated, the whole main stream throughout flows faster than usual. And as the muscles which form so large a bulk of the body contain within them a great portion of the blood circuit, their contraction inevitably tends to produce a powerfully accelerated flow of blood throughout the body. When these muscular pumps, so to speak, are located in different parts of that circuit, the combined effect of their activities is increased in proportion. In the body, these muscular pumps are widely distributed, we may say, at various points in the blood circuit; and in the same circuit are interposed, as it were, certain organs that depend, for the proper exercise of their functions, the same rapidity of blood current as obtains elsewhere. When the pumps are in action, therefore, the intervening organs are forced to share in the activities. The result is that mere physical (muscular) exercise by itself maintains most organs of the body in an active state, and physical exercise by itself keeps the body in a state of vigour. Indeed, the ordinary muscles of the body may be looked upon as accessory hearts that, by their action, materially assist the heart, by urging the blood stream forward and enabling the heart itself to make more complete contractions and relaxations—which in turn develop that vital organ in its fullest extent and maintain it in a state of vigour.

Coming to the brain, we find a difference. Purely muscular exercise does not produce much functional activity of the brain; rather, the tendency is for intellectual functions to be retarded in proportion to the excess of muscular activity. The brain is too far removed from any large muscular mass to be benefited by its blood-pumping action; and the circulation of the brain also forms a more or less remote independent circuit, the flow of the blood current in which cannot very markedly be affected by vigorous muscular exertion.

As the brain has not in its vicinity any large muscular mass that by its action can bring about a larger supply of blood for the intellectual functions, it has to depend upon the strength of the heart, mainly if not entirely, for its blood supply. Excessive brain-work will thus tell chiefly upon the heart; and if the heart muscle be not gradually strengthened by physical exercise, the injury to the heart muscle would be greater.

For the harmonious development of the body, intellectual

and physical exercise should go hand in hand;—a moderate amount of each is essential. Further, the exercise should be a matter of daily regularity—a very long walk or a ride on a Sunday, for example, would not make amends for purely intellectual exertion alone done on the week days. The heart muscle, the main-spring of vitality, gets strengthened by daily moderate exercise; and the accumulated reserve force of that organ would carry the body safely through any sudden unexpected stress of vital activity—disease or over-exertion.

“Fatigue” or “Exhaustion” is the sensation produced by excessive muscular or mental exertion. Faulty digestion may be responsible for a great deal of fatigue, as also emotions like worry or sorrow. When exercise or defective metabolism brings on fatigue, there are formed in the blood certain chemical poisons or “toxins” that by their direct action on the nervous system cause the sensation of fatigue. These poisons (*e. g.*, sarco-lactic acid) are formed in the case of muscle when it works beyond its powers, when all its carbohydrate food supply has been used up, and the albuminous substance of the muscle itself is breaking down. If from any cause the carbohydrate metabolism of the body is seriously impaired it would follow that the muscles, having but little of their usual carbohydrate material, would, if they are forcibly exercised, manufacture “fatigue toxins” in large quantity. A muscle working within its capacity, although it may form a certain amount of “fatigue toxins”, at the same time also forms a substance (“fatigue anti-toxin”) that would neutralise those toxins. Regularly graduated moderate exercise would so build up the muscles as to enable them to form a large amount of “fatigue anti-toxin” whenever there arises a necessity for it—as when a sudden violent exertion is inevitable or when a great emotional fatigue is encountered. The advantage of muscular exercise is therefore evident. Strength and vigour cannot be built up in a day by one bout of violent agitation of the body; such a course will bring on serious risks to the heart—apart from the fact that toxins accumulate in the blood without a corresponding amount of “fatigue anti-toxin” production. BRUNTON mentions the example of the famous wrestler Milo who was enabled to carry a full grown bull on his shoulder by beginning to carry it when it was a new-born calf. Day by day he carried it, and day by day as its weight increased his strength increased in proportion.

Had an ordinary man without any muscular development to his credit attempted the same feat, the bull would have carried the man, and not the man the bull!

Precisely the same reasoning holds good in the case of

intellectual development. Regularity and gradation are quite as important even here. No student can expect to figure himself as an intellectual wrestler in his later life if he rests content with the last one fortnight's very very hard study to tide over the crisis of a sessional examination.

Exercise of both kinds must be stopped much short of fatigue. Muscular fatigue is not a stimulus to the brain, nor is mental fatigue a stimulus to the muscles. No doubt it may not be an easy matter for each of us to find out a profession that would not exact from him an excess of brain work with very little opportunity for muscular exercise. Still, much may be done by early training, and by the continuation of that training beyond the days of school life.

Certain forms of exercise, like rowing, have fallen comparatively into disfavour. Steam, Petrol and Electricity have robbed man of his natural exercise of functions, and driven him from the open air to the close office room or the less suffocating atmosphere of a confined "Park"!

To derive the greatest benefit from exercise—physical and mental—pleasure must form a part of it. Pleasure is usually an ingredient with regard to children's physical exercises; but we cannot say that the brain-work of children is at present so adjusted as to afford them a high degree of pleasure in it. Probably the psychical stimulus (of which pleasure is a manifestation) is of itself capable of enhancing the production of the anti-fatigue bodies that counteract the effects of the "fatigue-toxins."

We may conclude by saying: Exercise begets strength for exertion; and Exhaustion saps the reserve vitality of the body.

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Original Articles.

• WHITLOW.

ITS PATHOLOGY & TREATMENT.

BY

FREDERICK C. PYBUS, M. S., M. B. (DURHAM), F. R. C. S. (ENG.)

*Surgical Registrar, Royal Victoria Infirmary,
Newcastle-on-Tyne.*



TO fully appreciate the varieties of whitlow, together with the mode of spread of the inflammatory process, some knowledge of the anatomy of the hand and forearm is indispensable. The points of most surgical importance are the various layers of the finger, viz., epidermis and true skin, subcutaneous tissue, tendon sheath with its contained tendon or tendons, and finally the phalanges surrounded by their periosteum. The terminal phalanx is peculiar in that there is no definite tendon sheath and so the subcutaneous tissue comes into intimate relation with the periosteum. The arrangement of the synovial sheaths of the fingers and hand is subject to some variation, but the commonest disposition is as follows—the sheath of the flexor longus pollicis starts at the base of the second phalanx and passes down that digit, under the annular ligament and extends for a short distance into the forearm. The 2nd, 3rd and 4th fingers have each a single sheath extending from the base of the terminal phalanx to the palm where they end opposite the neck of the metacarpal bone. The sheath of the little finger commences at a similar position near the tip of the finger and extends into the palm where it is continuous with the large synovial sac common to the mass of tendons of the flexor sublimis and profundus digitorum. This large sac commences about

* Specially contributed to *The Antiseptic*.

the centre of the metacarpal bones and extends under the annular ligament for about one inch or more. At its upper extremity this sac may communicate with the sheath of the flexor longus pollicis. From the upper extremity of this sheath infection may pass between the various muscles of the forearm. The lymphatics play an important part in the spread of infection. They eventually terminate in three sets of glands—those of the inner side of the hand passing to the supra-condylar and from these to the lower axillary glands. Infection of the outer digits may cause inflammation of the glands in the course of the upper portion of the cephalic vein.

The causation of whitlow is some infection, most frequently the streptococcus which gains access through some definite and visible wound of varying depth. In other cases the abrasion is so slight as to escape notice, or results from slight trauma which allows of the increased activity of the skin cocci. Very rarely whitlow may commence as an acute epiphysitis of one of the phalanges, this being of necessity limited to the young.

The varieties of whitlow depend on their anatomical situation and are four in number. Combinations of more than one variety are frequently present. The cuticular or most superficial is situated in the epidermis and appears as a blister between the horny and deeper layers. In some cases the lowest layers of epithelium are destroyed and a slightly deeper or sub-cuticular form of whitlow results, a condition resembling a burn of the 3rd degree.

Suppuration occurring in the subcutaneous tissue, particularly that of the terminal phalanx, constitutes the second variety.

Thecal whitlow results from suppuration in the synovial sheath on the palmar aspect of the finger. Its severity and danger depend on which finger is affected. If occurring in the thumb or little finger, there is a liability of spread into the palm and from there to the forearm.

The subperiosteal or 4th variety is constituted by suppuration under the periosteum, most often under that of the terminal phalanx, but which may also take place in the other phalanges.

The *cuticular* form usually appears as a yellow blister, after some slight trauma. Its recurrence is a suggestive sign of some deeper-organic lesion such as syringomyelia or Raynaud's disease. It is almost painless, there are few active inflammatory signs; a narrow red margin may, however, be present. It frequently spreads widely, causing a considerable separation of the cuticle and even of the entire nail. Its yellow appearance, absence of pain and the readily elicited fluctuation make the diagnosis easy.

The *subcutaneous* form may be limited to the terminal phalanx in which case the end of the finger is swollen, red, tender and painful. The pain, often of a throbbing character, is made worse when the limb is allowed to hang down. When suppuration has occurred fluctuation may be obtained. When the whole finger is involved it becomes markedly swollen, red, and is held in the extended position. The redness may extend to the interdigital folds and there is considerable œdema of the back of the hand.

In the *thecal* variety the finger may closely resemble that described as characteristic of the second form and indeed may be associated with it. If of primary occurrence, that is where there is a direct wound of the sheath, the redness may be less marked; there is, however, considerable swelling, usually limited to the finger. The finger is held slightly flexed and there is complete inability to move it in any direction. Unless an open wound is present through which the discharge may pass, there is great pain owing to the tension of the inflammatory products in the resistant sheath. Unless opened at an early stage destruction of the tendons results, leaving a stiff finger.

The final or *subperiosteal* form is usually accompanied by one of the above varieties. It is most often observed at the terminal phalanx after a subcutaneous whitlow. In this latter form, if it remain long unopened, infection may spread to the periosteum which becomes stripped from the bone, resulting in a partial or complete necrosis. In the other varieties the periosteum becomes affected usually after thecal suppuration, the tendon and its sheath being destroyed, infection passes to the periosteum, the bone, and in some cases the interphalangeal joint. The signs at first are not obvious, persistent swelling of the terminal phalanx is suggestive, while frequently a sinus is left just below the tip of the finger, at the bottom of which bare bone may be discovered on probing.

In some cases the tip of the necrosed phalanx may protrude from the sinus. When the bone is involved in the remainder of the finger, persistent swelling is a marked feature, due to granulation tissue between the tendon sheath and the periosteum. Later sinuses form through which carious bone may be detected.

Treatment.—Prophylactic.

Non-operative.

Operative.

The care of every wound, however trivial, and its antiseptic treatment may be relied upon to prevent whitlow.

The treatment of the cuticular form is essentially simple and consists, after washing the finger, of cutting away the whole of the separated cuticle with the scissors. This is an entirely painless operation. After washing away any purulent material, some boric powder may be dusted over the thin epithelium and dry dressing applied. Within a day or two the skin will be found sufficiently hard to allow of all dressings being abandoned.

The subcutaneous form requires to be treated as an ordinary cellulitis. In the early stages of inflammation before suppuration has become manifest, congestion must be brought about by one of the numerous methods. In the mildest cases, a boric fomentation is useful and sufficient. Later, or in more severe cases, passive congestion may be employed by using an India-rubber bandage applied to the forearm or arm so that venous congestion occurs below the constriction, this being maintained for twenty out of the twenty-four hours at first. The period of application may be gradually diminished as the lesion progresses towards recovery. In other cases, and where special apparatus is at hand, a Klapp's suction bell may be applied to the finger and active congestion brought about by removal of some of the contained air.

When suppuration has occurred or where the tissues are brawny and softening, an incision should be made in the middle line of the finger over the point of maximum swelling.

After the pus is evacuated, or where its formation is anticipated, the process of congestion, either active or passive, is continued. This materially hastens recovery and allows of a smaller incision being made than would otherwise be necessary. While many cases of cellulitis of the finger can be cured by means of congestion without operation, it is important not to delay incision too long since infection may readily spread to the periosteum or tendon sheath.

The thecal form of whitlow demands the most careful and prompt treatment if the tendons are to be preserved. The general signs of this form have been given above. Two incisions are required to open the tendon sheath to allow of proper drainage, one at either extremity. The distal incision is placed over the last interphalangeal joint, while the proximal is partly on the palm of the hand and lies opposite the head of the metacarpal bone. It is important that the sheath be not opened in its full length, if this is done, the tendons stand out and almost invariably slough. Frequently it is impossible to decide whether the theca is infected or not—in such cases a careful dissection should be made under general anæsthesia and each layer incised till the theca is exposed. If

necessary, its contents may be investigated by means of the exploring syringe.

If infected, it may be opened at the places described above. If an incision be made directly into it in doubtful cases the theca may be unnecessarily infected.

In suppuration of the terminal phalanx a probe may be used to determine the condition of the periosteum. Should this be separated it must be incised and necrosis of the terminal phalanx prevented. Subperiosteal suppuration of the other bones usually leads to and accompanies a general disorganisation of the finger.

Should the thecal form of whitlow affect the thumb or little finger the swelling may progress beyond that digit into the palm. In the case of the thumb there is swelling and tenderness along the thenar eminence and over the wrist at its radial border.

Should the main palmar synovial sac become infected from the little finger, considerable swelling of the hand occurs, the palmar hollow becomes filled up and a further swelling is noticed in the forearm above the anterior annular ligament. All these swellings show definite evidences of inflammation. To satisfactorily deal with these complications, it is necessary to incise.

In the case of the thumb sheath; first at its termination near the tip of the finger, secondly at the inner border of the flexor brevis pollicis, over the thenar eminence, and finally above the annular ligament to the outer side of the flexor carpi radialis till the sheath is reached. Unless it is very evident, a careful dissection should be carried on in each case so that important structures may be avoided. The radial artery in the above situation requires protection by gauze or division between two ligatures.

To lay open the main synovial sac an incision is made above the annular ligament to the outer side of the tendon of the flexor carpi ulnaris. Another means of procuring drainage is to open the sac by an incision to the inner side of the same tendon and then dissecting beneath it, in front of the pronator quadratus. A counter incision may be made below the annular ligament, in the line of the ring finger and above the superficial palmar arch, which in some cases requires division. After incision, active or passive congestion is an important adjunct to treatment, preventing further extension and hastening repair.

The following are the commoner complications:—

Cellulitis	{	Palm	{	Superficial
		Forearm		deep

Lymphangitis

Lymphadenitis

Cellulitis in the palm may occur in the interdigital folds; from this region the infection may spread deeply into the palm or superficially causing an abscess between the skin and palmar fascia. Suppuration in the forearm may be superficial leading to a subcutaneous abscess. If infection results from the large synovial sac it occurs between the muscular planes or above or below the muscular masses. This results in great destruction of muscle and impaired utility of the forearm. Sinuses may form on the front of the forearm or along its ulnar border. Suppurative foci may be reached from either of these surfaces.

Tracts of lymphangitis may be seen on the palm or forearm as red lines which may pass into a diffuse cellulitis.

Lymphadenitis may occur in any set of glands through which infected lymph passes. Their situation is (i) in the ante-cubital fossa, (ii) the supracondylar glands, where there may be a chain several in number, (iii) in the axilla, leading to a mere tenderness or discomfort on moving the arm to actual suppuration with the formation of an axillary abscess, (iv) tenderness and enlargement of the infraclavicular glands in the course of the cephalic vein between the deltoid and pectoralis major muscles.

In some cases the main lymphatic vessels along the inner side of the arm may be involved—leading to thrombosis—a knotted or beaded cord being present, or localised suppuration resulting in small abscesses.

When necrosis has occurred in the terminal phalanx, the sequestrum may be removed when loose or carefully removed if not yet separated naturally. Its forcible removal when the base, containing a tendon insertion, is intact, may lead to thecal infection and result in a stiff finger.

Where tendons are destroyed, the finger remains much thickened; sinuses may be present through which the yellow fibrillated tendons are visible. Continued thickening over the joint region means an acute arthritis and is usually followed by the formation of sinuses over the dorsal and lateral aspects. Finally, crepitus, lateral mobility or the probe demonstrates the carious articular ends.

Such fingers as these—

1. After tendon sloughing, 2. Septic arthritis,
3. Destruction of the 1st or 2nd phalanges are invariably stiff and usually a discomfort and nuisance, especially to working men, so that amputation must usually be advised.

It is possible to excise the affected joint allowing the finger to ankylose in a slightly flexed position, should its retention be wished. After necrosis of the terminal phalanx the finger remains quite useful though it is usually somewhat shortened and its extremity clubbed.

Active and passive movements must be instituted and persisted in should any impaired mobility be present after subcutaneous or thecal inflammation.

The points of greatest importance are the early recognition of the condition, and its variety. To prevent suppuration by congestive measures. To evacuate pus as soon as possible after its formation. Each operation being carried out by means of a careful dissection, the limb being rendered bloodless, if necessary, while a general anæsthetic is often advisable.

* SOME RECENT OBSTETRICAL EXPERIENCES.

BY

J. BERNARD DAWSON, M.B., F. R. C. S.

Late Assistant Obstetrical Officer, Queen's Hospital, Birmingham.

In practice, one often experiences a strange sequence of cases of a like nature. Such a number of interesting obstetrical cases have recently come under the notice of the writer.

This article simply contains an account of these, partly for their interest and partly because they are instructive.

The treatment may be open to discussion, but, at any rate, in all the cases it has the justification of success.

Case I:—The surgeon was called by the nurse to see a young primipara, aged 24, who was commencing labour. The woman was a new comer and had engaged a medical man who chanced to be absent without leaving a *locum tenens* in charge. The result was that the patient had not been previously examined by the medical man attending the confinement.

The patient had been experiencing slight labour pains for two hours and the os was dilated to about $1\frac{1}{2}$ inches. Abdominal examination revealed an unusually large uterus and contents, but owing to nervousness on the patient's part not sufficient evidence of twin conception could be made out to justify the medical man making any statement to the patient.

The pains became more severe and a second examination revealed a slightly larger os, ruptured membranes, and a breech presentation.

An injection of $\frac{1}{4}$ gr. of morphia with $\frac{1}{16}$ gr. of Hyoscine Hydrobromide was administered and the patient left quietly with the nurse.

The labour progressed slowly for two hours more by which time the breech of the child was beginning to distend the perineum and present at the vulva. The pains were by now distressing and frequent, although the patient was drowsy from the Hyoscine.

* Specially contributed to *The Antiseptic*.

These pains proving ineffectual, it was decided to interfere.

Chloroform was administered and with difficulty a broad flannel bandage was passed round the anterior thigh and groin. Gently traction upon this was of no avail, and fearing to damage the femur, was abandoned. After considerable trouble and much manipulation the anterior leg was brought down and delivered. The second leg was easily delivered, and in a few minutes the body and head followed. Some artificial respiration was needed by soon, and a healthy male child weighing 10 pounds was handed to the nurse. It was anticipated that difficulty might arise with the after-coming head, but the prolonged delivery of the breech undoubtedly so well dilated the vagina that the head followed quickly. On further examination of the mother it was found that there was a placenta presenting at the os and another child in utero. The patient was showing signs of fatigue and also of uterine inertia. Her pulse, however, was good and not above 90.

A pain delivered the placenta into the vagina from which it was removed to be followed by considerable loss of blood.

Examination showed that the second child was presenting by the head, and that there was no second bag of membranes intact.

There was now a considerable loss of blood from the site of the first placenta and as the uterus was not now contracting it was decided to empty the uterus as quickly as possible.

Proceeding to do so, it was found that both hands had slipped down beside the head.

The patient was fully anaesthetised, and after a little trouble both hands were replaced.

Forceps were then rapidly applied to the head and the child quickly delivered through the already dilated os and vagina. Immediately there was a copious hæmorrhage and the second placenta presented at the os.

The case was now one of post-partum hæmorrhage and the loss of blood was fearful and alarming.

The patient was slowly recovering from the anaesthetic, but was in a fainting condition which rendered manipulation easy.

The left hand was boldly thrust into the relaxed uterus and the second placenta expelled; then the flabby uterine wall was grasped between the internal hand and the right hand, pressing down above the pubes. Meanwhile a very hot lotion of Lysol ($\frac{1}{2}$ a drachm to a pint of water) was prepared by the nurse.

This was injected into the uterine cavity; the result of this and the massage was to stimulate the uterus to contract so well that the

accoucheur's hands were removed whilst he administered a hypodermic injection of Ergot Aseptic (*Parke Davis & Co*). Immediately the hands were withdrawn the uterus relaxed and the bleeding began again. The same procedure was repeated and after some 20 minutes the uterus contracted well and the patient was put comfortable by the nurse.

The recovery was uneventful and perfect, there being no sign of sepsis or any other sequel except the anæmia from which the patient rapidly recovered.

The interesting points of this case are:—

1. The size of the twin children, namely, 10 pounds and 8 pounds.
2. The obstructed breech presentation.
3. The prolapsed hands.
4. The post-partum hæmorrhage.
5. The heterologous twins and the two placenta. In all probability there were two separate bags of membranes which had ruptured during delivery, for each placenta had its separate fringe of amnion and chorion.

Case II.—Patient, 5 months pregnant, began to experience severe labour pains. After a lapse of 12 hours she sent for her medical attendant. She had lost very little blood and the pains had lost their severity, but she complained of something "hanging from her." This proved to be a loop of umbilical cord which had prolapsed. Upon examination it was found that the os was partially dilated and that both feet and one hand were presenting.

The woman was not a satisfactory patient, being alcoholic, intolerant of pain and extremely nervous.

The question was whether the foetus in its doubled up position was too large to be expelled naturally. It was decided to interfere and empty the uterus. Chloroform was given and after the vulva and vagina had been thoroughly cleansed, the whole hand was passed into the vagina. After some manipulation first one and then the 2nd feet and legs were brought down. Gently traction delivered the body, but the head was retained by the partially dilated os gripping the neck. As much traction as seemed safe was used but without avail. The left hand was then thrust up alongside the head and by carefully forcing the fingers into the uterus the fundus was reached, after a few moments, during which the os yielded considerably, the head was delivered, the intra-uterine hand playing the part of a shoe-horn to help the head through the os. After some trouble with an adherent placenta the

uterus was emptied and the woman restored to bed. Ergot was again given hypodermically. The subsequent history was good and free from sequelæ.

Case III.—The patient was a woman aged 32 who had an obstetric history of two living children, youngest 2 years, and two miscarriages.

The patient was in some distress and complained of painful and scanty micturition; she also thought herself pregnant, not having menstruated for 3 months. There had also been, what were described as bearing down pains, but no uterine hæmorrhage.

Abdominal examination showed nothing irregular; the bladder was not distended and the uterus could not be felt. Bimanual examination shewed a retroflexed gravid uterus with a soft and slightly patulous os from which, however, there was no loss of blood. The os had descended low into the vagina and was not more than 1 inch from the vulva; it was, moreover, directed markedly forwards, pressing upon the anterior vaginal wall. The posterior fornix was distended and occupied by the retroverted uterine fundus.

The patient was put to bed and given $\frac{1}{2}$ grain morphia suppository, the hope being that the retroversion might correct itself. 24 hours later the patient was in severe distress, having absolute retention of urine and a greatly distended bladder. This was relieved by catheter and an attempt made per vaginam to correct the displaced uterus. The patient was placed in the knee-chest position and two fingers in the posterior vaginal fornix attempted to push the fundus up. This having failed, a ring pessary was inserted and the patient given 3 hours' rest. She was then again placed in the knee-chest position for 40 minutes, the pessary being retained. The result of this position, the elastic pressure of the pessary and some slight digital assistance was that the uterus slipped past the promontory of the sacrum and relieved the patient of her symptoms. She subsequently showed no signs of aborting and continued her pregnancy without complication until she was delivered of a full term child.

In this case the uterus showed no signs of relieving itself by expelling its contents and the condition of complete retention of urine was so serious that active and immediate interference was the only course. The use of the pessary in this case was tried with the idea that the elastic pressure would assist in the reduction, but it must be clearly understood, that the use of a pessary without other treatment is not only quite useless but absolutely harmful.

These three cases have been given in some detail, for they are not very usual and have many instructive points. The key-note of

obstetrical practice is to know when to interfere. In these three cases the results all justified the treatment.

*PTOMAIN POISONING.

BY

SURGEON-MAJOR R.E. WRAFTER, B.M.S. (*Retd.*)

It is scarcely necessary to refer to a consideration of the rules of diet which do much towards preserving health, but care should be taken, however, that all food is of the best quality; otherwise germs of disease are liable to be conveyed into the system and produce sickness. Impure drinking water, especially brackish water containing mineral water, so frequently met with in Western India, may induce disturbance in the animal economy among those who employ such waters for drinking purposes. Similar remarks apply to the use of stale fruit. All fruits should be taken fresh early in the morning, and, as a rule, seldom if ever, at night. Milk, adulterated with foul water, may likewise become a medium of communication of disease, and excite gastro-intestinal irritation. There is also evidence to show that the contagion may be conveyed by the use of old termed provisions consisting of stale fish, especially oysters, which have a particular bad name in this respect. Dr. Carpenter mentions that among a number of school children who had eaten plentifully of spoiled oysters, eleven lost their lives. In the Bombay Presidency demise after eating oysters is often heard of. All varieties of fish are bad in the breeding season, whilst leprosy, elephantiasis, cholera, scurvy, scabies, skin diseases, gastric derangement and nervous depression have been attributed to stale fish, putrid or badly cured fish. A fish is said to be suspicious, if silver or an onion boiled in the same water turns black. For a weak stomach boiling or broiling should be the process of cooking. The nutritive value is very inferior to flesh, and a large proportion passes through the body undigested. Still fresh fish is a very grateful, pleasant change either in health or sickness. The symptoms of poisoning by stale fish usually appear one or two hours after eating, and are diarrhoea, vomiting, feeble pulse, great nervous depression, and, in fatal cases, delirium, stupor and suppression of urine. Treatment has been found unsatisfactory; yet many lives are saved by careful nursing, and by assisting nature's efforts towards recovery by the judicious administration of appropriate remedies, and by plenty of fresh air. It is in the premonitory stage of diarrhoea that most good may be practically done.

* Specially contributed to *The Antiseptic*.

Our Contemporaries. MEDICINE.

Mosquitoes and Malaria.

HOW TO REMAIN IMMUNE.

From a Lecture by Lt.-Col. E. A. W. Hale, I.M.S., recently delivered at Northbrook Hall, Dacca.

There are three accepted methods of malarial prevention. The 1st is called the larvacidal method, that of killing the larvæ. The second is the protection of man from being bitten by mosquitoes. The third is the prophylactic quinine method.

First Method.—It is reasonable to expect, that if we kill off all the mosquitoes in any given locality the malarial parasite cannot be injected into us and malaria may be prevented. To hunt out and kill off all mosquitoes in the Imago or flying stage, would be impossible; whereas the larvæ, when it is swimming about in water, has been found to be a very vulnerable stage. The larvæ must live in water and must breathe through the air tube which it projects above the surface. If the collection of water is small, the task of extinction is easy inasmuch as the water may be emptied on the ground and allowed to evaporate when the larvæ and nymphæ at once die. If, however, the collection of water is large, as for instance a lake or a tank, it has been found that if a thin layer of oil is made to cover the surface, the larvæ cannot pierce this layer, and therefore cannot breathe and must die.

The destruction of larvæ is also hastened by stocking tanks with small fish which feed voraciously on mosquito larvæ and considerably diminish their numbers.

In small running streams, the favourite haunt of the anopheles, it is advisable to clear the sides of all weeds and algæ, as they protect the larvæ and prevent their being carried away by the current.

This larvacidal method is strongly advocated by Major Ronald Ross and has been successfully used by him in many places in stamping out malaria and yellow fever. A given locality is divided up into sections; to each section a mosquito gang is appointed, whose duty it is to visit systematically once a week every house, compound, &c., in the section allotted to it, to empty all tins, broken crockery and small vessels containing water, which may serve as breeding places, to clear drains and to cut jungle and undergrowth. In addition, drainage of the locality is taken up on a large scale; all small hollows are filled up and large ones are drained or covered with soil; by these methods all the larvæ are killed off, and the mosquito exterminated.

By this method Major Ross exterminated mosquitoes in Ismalia on the Suez Canal and stamped out malaria.

In Havanna and other parts of the Island of Cuba this method has proved most useful. One of the most useful instances of the success of this method is the immunity from disease enjoyed now by the workers in the Great Panama Canal where work could not be carried on for a long time owing to the frightful mortality amongst the Engineers and coolies.

Second Method.—Protection of man from the bites of mosquitoes has been carried out chiefly in Italy by the use of mosquito-proofs, by fixing gauze to all doors and windows, and if the inhabitants have to go out at night they wear gloves on their hands and gauze veils over their heads. The application of this method, though successful, is difficult in a large community.

Third Method.—The quinine method: or systematic administration of quinine throughout the malarial season. It may be given in different doses. Dr. Kooch gives 15 grains in each of two successive days, every eight days throughout the epidemic period.

Dr. Celci, the Italian expert, gives 4 grains daily.

A method tried successfully in India is that of giving one dose of 15 grains once a week. A very interesting report on the success of this method has been lately prepared by Lieut-Col. Braid, I.M.S., Inspector-General of Prisons in the Punjab.

Malaria in an epidemic form raged throughout the Punjab in the autumn months of the year 1908. It was estimated that between August and November, 90 per cent. of the people suffered from one or more attacks of malarial fever, and that 50 per cent. were more or less continuously ill. The deaths registered during the year as due to fever amounted to 697,058 out of a total mortality of 1,020,125 and of these 402,394 occurred in the four autumn months. Distributed among the fever-stricken population, exposed to identical climatic influences, were "30 communities of various size confined in jails." Each prisoner was given 10 grains of quinine on admission and subsequently 15 grains once a week. When 90 per cent. of the general population suffered, among the whole jail population only 10 per cent. were affected.

Government has placed quinine ready at hand throughout the Province; every Post Office has a stock.

Finally, Lt.-Col. Hale, I.M.S., recommends a combination of the 1st and 2nd methods. To insure immunity to yourselves and your families and house-holds he advises taking quinine either 4 grains daily or 15 grains once a week, but at the same time not to neglect the 1st method

and also to empty out all small collections of water, to put oil on large ones, and to flush all drains regularly.

Abridged by.

JOHN DEVASIKHAMANI,
Sub-Asst. Surgeon.

Alcoholic Applications in Typhoid Fever.

CHEINISSE advocates strongly, as an alternative to cold bathing in typhoid fever, the application of alcohol to the abdomen. He applies a compress, consisting of a quadruple fold of absorbent cotton wool, wrung out of alcohol sufficiently to prevent dripping. Over this he places a second compress of cold water, in order to weaken the alcohol a little, and so prevent irritation of the skin, the whole being covered by an impervious bandage. The water compress should be changed every hour, but the one containing alcohol may be allowed to remain double that time. It may be necessary to lubricate the skin with a little lanoline, if irritation should occur, but such inconveniences have not been found to intervene with any degree of frequency. This treatment has been followed in twelve cases of enteric fever, and although the number is not great, the cases themselves were of considerable severity, and no untoward results were experienced. It has been particularly valuable in the case of children where the tendency to heart weakness renders cold bathing dangerous, and the author recommends that his treatment should be invariably preferred in such cases.—*The Medical Times.*

Unequal Pupils as an Early Sign in Phthisis.

GEZA FODOR.—In pulmonary tuberculosis, the pupil on the side of the affected lung is said to widen more in feeble light than the pupil on the other side and to respond to light less completely and more sluggishly. In the majority of his cases the writer found this phenomenon present, often at a stage of this disease where no definite pulmonary lesion could be made out. He ascribes it to irritation of the sympathetic plexuses.—*Interstate Medical Journal.*

Veronal in Delirium Tremens.

DR. V. FRILIS MOTTER OF COPENHAGEN has experimented with veronal in these cases since 1903. He has come to the conclusion that good results have been obtained, viz., the patient becomes quieter and sleeps longer and the pulse becomes steadier and temperature drops from 100.6 and 102 to normal after the sleep. He used to give 1 gram of veronal on admission

and if no sleep followed within three (3) hours (this was seldom the case) a 2nd dose of one gram was given.—Sleep then set in rapidly and lasted for from 6 to 12 hours. On awakening, the patient was clear and quiet and felt quite well. No poisoning symptoms occurred in any of his cases. If any tremor was still present, $\frac{1}{2}$ gram of veronal was given, and the tremor ceased before evening. Out of over 100 cases, only 3 did not yield to the treatment.—*The C. M. Journal.*

Typhoid Fever in Infants.

ROMMELER reports a case in which a seemingly healthy infant transmitted typhoid fever to a third person. The child's mother had been removed to hospital suffering from typhoid fever, the child being sent to a friend to be looked after. With the exception of a slight attack of diarrhoea, which soon passed, the infant seemed to be in perfect health. Two weeks later, however, the foster-mother herself developed typhoid fever, and in turn her three children, her niece, three years old, and a servant were attacked. On examining the blood of the infant a positive Widal's reaction was obtained, and on one occasion active typhoid bacilli were isolated from the stools. The author points out that when as nursing mother develops typhoid fever her infant should also be isolated, for symptoms of the disease are often so slight in young children that there is a danger of an apparently healthy baby carrying infection to others.—*The Hospital.*

A Case of Tachycardia.

BY

J. A. BAIRD, M.D., *Hemmingford, Que.*

The following are notes of a case that, alarming as it seemed at first, appears to be one of hysterical tachycardia. The patient was a multipara of 26 years, small, well formed, well-nourished, whose organs at previous examinations have been found to be normal. Her complaints were that her heart "pounded fiercely fast." Eight days after her confinement I was called to see her in haste; as she lived far away, I arrived four hours later and found her pillowed up in bed, her eyes "starting," palpitation of the heart being plainly visible through the coverings. She was sweating profusely, but her respirations were not very rapid, and she had no cyanosis; her temperature was $99\frac{1}{8}^{\circ}$. I could not count the pulse, but it was at least 200, small and regular. Inspection of the thorax showed a visible impulse from the third rib downwards to four inches below the nipple, and from one inch to the right of the sternum to the posterior axillary line; percussion showed dilatation to

the left to one inch beyond the nipple. On auscultation, the sounds were replaced by a tumultuous humming noise, heard alike over base and apex and in the axilla.

The patient's family history indicates that her mother belongs to an intensely neurotic family, and is herself of unstable nervous temperament. The history of the present illness indicates that eight days before onset the patient was delivered of a still-born child; subsequent to labour for two days the pulse rate was quickened, though not greatly. Twelve hours at the onset, the pulse was 120 and the heart sounds were audible. Digitalis, and morphia (gr. $\frac{1}{4}$) twice proved of no effect. Potassium bromide (grs. xx) seemed responsible for the good result. On the same afternoon, she was in a comparatively normal state, but at precisely the same time on that afternoon, the tachycardial attack recommenced. Without going to see the patient, a single dose of bromide (grs. xx) proved sufficient; during the subsequent week two slight attacks supervened.

The cause inducing the first attack was a severe fright; and it appears that at the age of 15, the patient suffered from a somewhat similar attack.—*The Montreal Medical Journal*.

Formalin for Ringworm.

Since the introduction of the X-ray treatment of ringworm the various antiseptic and parasiticide remedies have fallen some what into the background. Dr. Mackinnon, who writes from Cape Colony, publishes in the *Lancet* a brief description of a method in which he has great faith; it seems well worth trial by those who, as he presumably is, are not within reach of a thoroughly equipped electrical plant. The drug he recommends is not mentioned in the latest edition of the standard British work on skin diseases, and practitioners in Great Britain may therefore not be familiar with it. The area of skin affected is washed with spirit and then allowed to dry. Then with a soft camel-hair brush a 40-per cent. solution of ordinary formalin is painted on, and the head is meanwhile placed in such a position that the liquid will not run off. According to the author, one such application is sufficient as a rule to effect a cure, but if there is any doubt he repeats the application in five days. There is sometimes some smarting in young children, and the skin often scales off from the irritating action of the drug; but these are only slight drawbacks from a process which is described as clean, rapid, and effective.—*The Hospital*.

Anasarca in an Infant due to Administration of Salt.

J. D. EWART, M.B.—A boy, aged 10 days, a first baby, presented marked anasarca. The arms and legs were much swollen, the skin shining. One eye was completely closed, and the palpebral fissure on the other side was a mere slit. The skin on the trunk also was distended and pitted on pressure. The umbilical scar was healing. The child was apparently comfortable, did not cry much, and took food fairly well. The bowels were regular, and urine was passed freely. The labour was normal but as the mother had little milk the child was bottle-fed on the third day. It was found that the nurse had been adding to the child's bottles, which she prepared, a quantity of salt. This was stopped and the dropsy rapidly disappeared.—*The Medical Review*.

Why Soap Cleanses.

SOME interesting details are given in *La Technique Moderne* concerning the researches of M. W. SPRING, a Belgian chemist, into the processes whereby soap cleanses. It has been stated that the cleansing properties of soap are due to its combination with the soiling substance, but this only half explains the question as to how soap acts. An explanation is still required as to why it disappears after having taken up and entered into combination with the dirt, or, in other words, why the compound is removed. The author, after studying the action of soap upon various soiling substances, such as lamp-black, clay, red chalk, silica, cellulose, etc., comes to the conclusion that the cleansing of an object consists in a process of substitution. There is brought about a colloidal combination of the soap and the soiling substance, which, by reason of its constitution, no longer has the power of fixing itself by absorption on to the solid body, with the result that it is easily carried away by the water. Thus in washing with soap one puts it in contact with one's soiling substances, these latter having a greater affinity for the former than for one's skin. The process does not end here, for soap in its turn has even a greater affinity for one's skin than for the substances which it proceeds to replace and to set free to be taken up by the water and removed. The dirty substances have a chemical action on the fresh solution of soap and water, resulting in the formation of an acid salt, with which they agglutinate themselves. This compound of colloidal absorption is due to electrical action. The constituents have different electrical polarities. The compound is stable and can pass through a filter-paper without soiling it.—*The Hospital*.

Rheumatic Parotitis.

COURTOIS-SUFFIT and BEAUFUME:—Parotitis forms perhaps the of rarest the many complications of acute articular rheumatism; very few cases have been reported. The writers have observed two such cases which, with another, under the care of M. GOUGET, indicate the nature of the condition.

CASE 1.—An accountant, aged 27, was seen. He had suffered from an attack of acute rheumatism, lasting a month, 4 years previously. At the beginning of May he began to suffer from fever and slight conjunctivitis. These symptoms were attributed to influenza and after a week he returned to work but complained of fatigue and numbness in the joints. On May 19th the right wrist became swollen and the patient was feverish but had no sore throat. On the following day the majority of the larger joints, especially in the lower limbs, were swollen and painful. Sodium Salicylate was prescribed, but as the pain persisted he was admitted to hospital on May 24th.

On examination both knees, ankles and shoulders, as well as the right wrist and elbow were swollen and painful, the skin over the joints being reddened. The internal organs appeared healthy, the urine abundant and not albuminous. The temperature was 102.5° and the pulse 94. He was ordered 4 gm. of sodium salicylate daily, milk diet and a chloroform liniment locally. Two days later the pains were less but the urine had decreased to 400 c.c. and contained albumin. Next day only 300 c.c. were passed containing blood, and the salicylate was discontinued, but a further decrease to 200 c.c. occurred on the following day, the patient perspiring very freely. On May 30th the amount of urine rose to 1,300 c.c. and continued to increase till June 6th, when it attained 6 litres, the swelling of the joints having almost disappeared and the pain become much less severe. On June 7th the temperature in the morning was 102.3° and in the evening 104.9° . In the right parotid region there was a tense red swelling. Next day this had increased and invaded the cheek. There was pain on opening the mouth with radiations to the ear and mastoid region. The joints were neither painful nor swollen. The sodium salicylate was continued, and next day the swelling of the parotid was considerable and extended to the cheek, neck, and mastoid, the skin being tense, red, and glazed, but only slightly painful spontaneously or on pressure. During the following two days the improvement in the parotid continued but the temperature remained about 104° without apparent cause. There was no affection of the joints. On June 12th the parotid had become normal but several of the joints became swollen and painful, and the first cardiac sound was very dull at the

apex. During the evening he complained of malaise and headache, and suddenly became violently excited, shouting and moving his limbs which had been fixed by the pain during the day. It required 3 persons to keep him in bed, but sleep was procured by a dose of chloral. Next day he was in a state of stupor, but in the afternoon active delirium again appeared. At 4 o'clock his temperature was 108.3° (verified by 2 accurate thermometers). Baths at 75° were ordered every 3 hours. The delirium persisted during the night and the temperature at 6 A.M. was 105.4° . Lumbar puncture was practised, the fluid flowing freely but not under pressure. No deposit was formed after centrifugalisation for 15 minutes and stained films showed only one or two cells in each microscopic field. The delirium gradually gave place to prostration and in the evening the temperature was 101.8° . The baths were continued on June 15th but on the following day the patient was much better and had forgotten the events of the preceding days. The joints were still painful but less swollen. The baths were discontinued and the temperature fell, the dose of salicylate being progressively reduced till it was stopped on July 5th. Convalescence was slow, but the patient left hospital on July 21st without albuminuria, but with a muffled and prolonged first sound.

CASE 2.—M. GOUGET observed in 1893 a patient suffering from a moderately severe attack of acute rheumatism in whom during the course of the disease the right parotid gland became swollen and slightly painful. The condition of the parotid only lasted for 36 hours and was accompanied by no other complication.

Case 3.—A student, aged 20, healthy with the exception of two previous attacks of acute rheumatism, followed by well marked mitral incompetence which was perfectly compensated, was attacked for the third time in October, 1909. Most of the larger joints were affected and the temperature ranged about 102° . The patient was treated by sedative applications and salicylate of sodium in doses which were progressively increased from 4 gm. to 8 gm. daily. There was no albuminuria. On October 11th improvement had commenced, as the elbows and right wrist and ankle were but little swollen and almost free from pain while no fresh joint had been involved for 3 days. The urine measured 1100 c.c. and the evening temperature was 101.5° . On the following day, on waking, the patient felt pain on moving the jaw or swallowing. There was slight pain on pressure under the lobule of the right ear and behind the angle of the jaw, but no swelling was visible. There was no sore throat, stomatitis or redness about the orifice of Stenson's duct. The temperature was 102.8° . In the evening there was evident swelling

of the parotid gland which was tense and painful. The temperature was 103.3° . Local applications and 9 gm. salicylate daily were prescribed. On October 13th the swelling had increased behind the jaw and had extended to the right cheek but the tenderness on pressure was less. There was occasional pain over the side of the neck as far as the right shoulder which had not been involved. There was no pain in the temporo-maxillary joint and the skin retained its usual whitish colour. The temperature was 102.3° , the urine measured 1250 c.c. He was ordered 10 gm. salicylate daily. Next day the parotitis had diminished and palpation and movements of the jaw were less painful. The temperature was 101.8° . Salicylate reduced to 8 gm. daily. On the following day both pain and swelling had disappeared. The pain in the joints which had persisted throughout the parotitis had markedly diminished. The temperature was 100.5° . The improvement continued under large doses of salicylate but complete recovery was only obtained after another month's treatment.

These cases show that parotitis may occur when the rheumatic attack is on the decline and is not connected with angina or stomatitis. It is accompanied by a temperature which may exceed 104° , but resolution is complete in 2 to 5 days. It is probably due to a localisation in the parotid gland of the microbe of acute rheumatism which here, as in the joints, does not produce suppuration and yields to sodium salicylate in full doses.—*The Medical Review*.

The Imperial Malaria Conference at Simla.

Proceedings of the Imperial Malaria Conference.

We may here briefly summarise the report of the Sub-Committee on the use of quinine.

1. For the cure of adults in the quickest time quinine should be given in doses of not less than 20 grains and not more than thirty daily, of the sulphate (15 to 20 grains of the hydrochloride). For children over five years half the above and for children under five years one grain for each year of age.

2. The 20 or 30 grains should be given in two or three doses of 10 grains each, and it should be given whether fever is present or not.

3. After the fever is over the full curative dose should be continued for three days; after that the dose should be reduced to five grains, and this five grains taken daily for three weeks to prevent relapse.

4. The best salts are the hydrochloride or the sulphate (the hydrochloride is much more expensive). For children the tannate may be used, which is more or less tasteless.

5. The acid solution is the best form of administering quinine, but the solid form powder or tablet must be used for the general population.

6. For prevention the best plan is to take five grains daily, preferably *in the evening* during the malarial season.

7. If the treatment does not cure the fever, then it is probably not malarial fever.

MAJOR E. WILKINSON, F.R.C.S., I.M.S., who was then acting Sanitary Commissioner, E. B. and A., gave a sketch of the scheme for distribution of quinine by "treatments" rather than by doses, that is, as one dose is admittedly useless, he proposed that Government should sell it cheaply through the post offices and other agencies in quantities sufficient for the complete treatment of one person. Instead of ten grains of quinine for one piece he proposed parcels of quinine at $3\frac{1}{2}$ annas each containing 80 grains in twenty 4-grain tablets.—*The I. M. G.*

Opiates in Infancy.

The much-discussed question of the dangers of giving opiates to young children is once more dealt with in the *Annales de Médecine et de Chirurgie Infantile* by DR. LUST. This observer says that there is no contraindication to their use in infants, and that they are of the greatest value in spasmodic conditions. He declares, however, that it is not safe to prescribe opium preparations which contain all the alkaloids of the drug. Morphine alone should be used. The tolerance of infants for this alkaloid is greater than that of the adult if the dose be calculated from the weight of the patient and not, as is usually the case, from its age. This alkaloid is stable and its dose can be carefully regulated. If given by the mouth the dose should be calculated at one milligram for each kilogram of weight for twenty four hours. This dose should be halved if given subcutaneously. It can be increased without danger as there is no accumulation in the system.—*The Hospital*.

Bodily Pains of Intestinal Origin.

EBSTEIN discusses at length the pains and aches of various portions of the body which may be caused by chronic constipation. Not an uncommon location for these toxic neuritides is the region of the nervus trigeminus. Not only is there neuralgia, but there may be point tenderness, especially in the supra- and infra-orbital notches. The occipital nerve may also be affected, and constipation is not an uncommon cause of occipital neuralgia. The brachial plexus and its branches may be

involved and cause point tenderness in various spots, especially over the radial nerve in the lower third of the upper arm, in the sulcus bicipitalis internus, and between the internal condyle and the olecranon. These are usually accompanied by points in the supra-clavicular notch and the neck. Outspoken neuralgias of the brachial plexus arising from constipation have not been seen. Local ostealgias of the thorax, especially over the xiphoid and false ribs, may be caused by the same thing. In the lower extremities the usual seat of the painful points are below Poupart's ligament, to the inner side of the knee, and on the internal malleolus. Knee-joint neuralgias are especially common, and hip-joint affections are not unknown. In such cases the tendon reflexes are often much increased. All of these conditions, even when so severe as to cripple the patient, clear up rapidly as soon as the points are kept well open for a few days—*The C. M. J.*

Abdominal Auscultation.

In cases of large abdominal tumours it is often of considerable importance to determine before operating the presence of adhesions to the adjacent parts. According to Dr. V. Piazza-Martini, of Palermo, auscultation over the tumour affords frequently valuable information in this respect. If the mass is adherent the heart-sounds are clearly heard through the abdominal wall in the adherent zone, and often the respiratory murmur can be detected at the same time and even the voice-sounds are transmitted. In three cases reported by this author these observations were confirmed by subsequent laparotomy. One was that of a large ovarian cyst. The heart-sounds were transmitted as far as the pubis and the groins, and the respiratory murmur could also be heard feebly. Operation showed a cyst, with a twisted pedicle and adherent in every direction. The other two cases were also ovarian cysts, and the signs were similarly confirmed by laparotomy. In two other cases of ovarian cyst in which there were no adhesions these signs were also absent.—*The Hospital.*

Fever Without Physical Signs.

By

THOMAS J. HORDER, M.D., F.R.C.P.

Cases of fever fall into two groups. In one, certain physical signs more or less adequate to the diagnosis are present; in the other, they are not. An intermediate group of cases exists in which there are physical signs, but they are inadequate for diagnosis—ambiguous signs, admit-

ting of more than one interpretation. The rose spots of typhoid fever constitute an adequate sign, pathognomonic of the disease; enlargement of the spleen is an ambiguous sign, which, though indicating the possibility of typhoid fever, may be caused by many other infections. The cases of no physical signs, or of signs that are equivocal as regards diagnosis, are usually due to infective lesions of organs or tissues more or less deep-seated, which yield signs less readily than superficial organs. Such are the blood, intestines, gall-bladder, pelvis of the kidney, pancreas, endocardium and spinal meninges. The cases may be divided into two groups, according as the signs are latent or difficult to find, or are absent.

I.—PHYSICAL SIGNS OVERLOOKED OR LATENT.

(1) *Cholecystitis* is a not uncommon cause of fever, without obvious signs. The patients are usually the subjects of gall-stones, but not always. Often they are stout, making abdominal examination difficult. Pain is generally present, though it is often by no means severe; sometimes it is absent. Flatulent distension of the bowels is almost constant. Colic is not a feature. The attacks are prone to recur, sometimes after brief intervals, and the course of the disease may then suggest typhoid or Malta fever, with relapses. Repeated palpation may reveal a rounded elastic tumor in the right hypochondrium, and in this discovery the genu-pectoral position may give valuable help. This tumor may only be felt for a brief period of the disease. The urine should be tested for traces of bile, for it may be icteric before any jaundice is noticed in the skin or mucous membranes. Jaundice may be absent throughout the whole course of the disease. Even with an intermitting type of fever and rigors, the inflammation is not necessarily suppurative. And there may be no leucocytosis; indeed, the leucocyte count may be low (4,000–6,000)—another fact which may suggest typhoid or Malta fever.

(2) *Pyelo-cystitis*.—The amount of pus in the urine may be small; and what is not seldom the sole sign of the disease may thus be overlooked. Sudden rises of temperature, often accompanied by rigors, in old men, or in patients suffering from diseases of the nervous system, leading to sphincter troubles, frequently are due to infections of the urinary tract. By far the commonest microbe at work is *B coli*, admitting of ready isolation from the urine.

(3) *Pyorrhæa Alveolaris*.—A close inspection of the teeth and gums should never be omitted in cases of fever of obscure origin. Long-continued and marked pyrexia may be due to oral sepsis. The form of

the fever is apt to be periodic, with intermissions lasting from one to several days.

(4) *Perigastritis and Subphrenic Abscess*.—In these complications of gastric ulcer, physical signs are often delayed, perhaps for a fortnight or more. When signs do appear, pleural friction is apt to be the first. The same conditions may follow gastro-enterostomy, or the suture of a perforated gastric or duodenal ulcer. A rising leucocyte count may suggest the sequence of events.

(5) The subjects of *acute rheumatism* are prone to develop bouts of fever with little or no physical signs. Sodium Salicylate may have no effect upon the fever. Probably some serous membrane is in a state of smouldering inflammation. But signs of inflammation may not be forthcoming for these reasons: the presence of old valvular disease makes the diagnosis of a recurrence of acute endocarditis impossible; pericardial adhesion, oftentimes universal, prevents the appearance of the physical sign of pericarditis; and of acute myocardial disease there is no physical sign. The undoubted possibility of rheumatic pleurisy and rheumatic peritonitis must not be overlooked. These cases of rheumatic pyrexia, not seldom considerably prolonged, are always a source of anxiety, which is increased in the presence of valvular disease. For the transition from rheumatic to malignant endocarditis, in which streptococci play so important and so fatal a part, may be very gradual and may deceive even the elect. However, a careful search for the cardinal signs of infective endocarditis, which includes bacteriological cultivation of the blood, will generally be helpful. The concurrence of chorea, or of nodules, is much in favor of the non-infective variety of the disease, though neither event excludes streptococcal endocarditis.

(6) *Localized tuberculosis* is probably the commonest cause of fever with latent physical signs, or with signs difficult to elicit. There is sometimes a too ready tendency to conclude that a patient is tuberculous because he is febrile over a long period. This should be resisted until several other causes that are more easily excluded have been reviewed. Nevertheless, the possibility of the disease must always be borne in mind, and it is useful to remember certain situations in which this infection is apt to lead to more or less disturbance of general health, with fever, usually mild and remittent. These situations include the lung, pleura, peritoneum, lymphatic glands, kidney and suprarenals, Fallopian tubes, and spine. Critical examination of all these organs and their functions must be made, and one or other of the tuberculin tests must be undertaken, remembering the limitations which the presence of fever imposes upon these investigations. Occasionally the febrile patient has given

proof of active tuberculosis; this must be allowed great weight. The frequency of secondary pyrogenetic infections in tuberculosis must also be remembered; such a secondary infection may occasionally be demonstrated by blood culture.

(7) *Fever following operations*.—A physician is not infrequently asked to discover the cause of pyrexia arising soon after an operation. However confident (and justifiably so) the surgeon may be of his technique, his wound must be closely examined. A rising leucocyte count is an important indication of infection. Cultures should be taken from any fluid present, be it "blood-stained fluid," "serum," or obvious pus, and efficient drainage ensured. If a growth of any microbe is obtained from the cultures, an appropriate vaccine should be prepared and administered forthwith.

II.—PHYSICAL SIGNS ABSENT.

(1) *Influenza* is the commonest cause of pyrexia without physical signs. Hence the doubt which always exists as to the accuracy of diagnosis; for there is nothing specific about any of the symptoms of influenza, nor about all of them taken together. They do but spell acute microbial poisoning. This doubt is naturally less during an epidemic. The fever in uncomplicated cases is usually over by the fifth or sixth day; if it lasts longer than this almost certainly some complication is present, or the disease is not influenza. If a complication exists, a focus of infection is probably present (bronchial, pulmonary, intestinal, biliary, endocardial, meningeal, etc.), and physical signs are usually forthcoming. In uncomplicated cases, leucopenia is of great service in diagnosis, especially in the absence of the typhoid agglutination reaction. Even with pulmonary complications, provided the infection remains pure, leucopenia is apt to occur. But a mixed infection, especially with the pneumococcus, is the rule in influenzal pneumonia, whether lobar or lobular, and a high leucocyte count is therefore by no means uncommon. Despite some earlier statements, it seems that in uncomplicated influenza the microbe is rarely, if ever, demonstrable in the blood.

(2) *Typhoid fever* is the most frequent and the most important cause of fever of longer duration than five days in Great Britain, physical signs being absent. As a possible cause of any case of obscure pyrexia, it must be perpetually borne in mind. Neither a sudden onset, nor absence of headache, nor the form of the temperature chart must prevent this. Diarrhoea is no longer regarded as an almost constant symptom. The manifestations of the disease are so protean that safety

lies only in regarding every patient suffering from fever of undetermined cause as a suspect. In one case the first symptom was acute delirium, which continued during the first fortnight; there was no headache at any time. Both in this case and in another case of typhoid fever with marked delirium during the invasion period, there was a marked neuropathic family history. Before the immunity of any district from typhoid be accepted as evidence against the disease, it must be shown that the patient was continuously in that district during the two weeks preceding the illness; for the infection may have occurred during a sojourn elsewhere.

In the pathological investigation, sufficient importance is often not attached to the leucocyte count. The agglutination test should always receive this support, for the association of leucopenia with even an incomplete Widal reaction is a valuable indication of typhoid fever. A complete Widal reaction with leucopenia is diagnostic. If the agglutination reaction is not present, as it may not be during the first week, the diagnosis may often be established by blood-culture. Allied to typhoid fever, and often undistinguishable from it clinically, is "paratyphoid fever." These cases are even more liable than cases of true typhoid to present no physical signs. The diagnosis can be made only by isolation of the microbe from the blood-stream, urine or feces.

(3) Certain cases of *septicæmia*, and especially *septicæmia* in the puerperium, may lead to marked fever without other signs. The most careful obstetrician may fail to discover aught amiss with the pelvic viscera; indeed, in fatal cases a careful dissection of the uterus and uterine vessels after death may still reveal no macroscopic signs of disease. The diagnosis may turn almost entirely upon blood-culture.

A bone injury in a child suffering from sudden fever must always receive critical examination; and the skeleton (especially the long bones) must be carefully examined if high fever, abrupt in origin, exists in a child without ascertained cause. Unfortunately, cases of infective osteomyelitis, due to *Staphylococcus Aureus*, become pyæmic so rapidly that even the early detection of the focus and its prompt treatment rarely saves the patient; but probably some cases are saved by early diagnosis, and do not run this fulminating course. If incisions are made into doubtful areas of inflammation, cultures of the exuding fluid should be made, however innocent it appears to the naked eye. Now and again a drop of serum will yield a copious growth of staphylococci in the warm incubator within six to eight hours; this should at once lead to further surgical procedure, if no fall has taken place in the temperature

or in the leucocyte count, and if no alleviation has occurred in the general condition of the patient as the result of the first incision.

(4) *Malta Fever*.—Unless the attention is called to the possibility of this infection, it may be overlooked. Residence in a Malta fever district may have been of short duration, and no obvious illness may have occurred there. The patient may come under observation for general weakness, neuralgic joint pains, or the fever, some months or even years afterwards, and may give no history suggesting his infection. The diagnosis is made either from a positive blood-culture (rarely possible in such a case), or from a combination of leucopenia with agglutination of a strain of the micrococcus by the diluted serum.

(5) In *malaria* the diagnosis rests upon the discovery of the parasite in the blood; leucopenia ("relative lymphocytosis") is almost invariable. A markedly intermittent character of the fever, however, must never bias the observer unduly in favor of this diagnosis, even in the face of a clear history of ague in the past; for many pyogenetic infections, local and general, are accompanied by this form of fever. The occurrence of rigors calls for the same caution. If the patient has never lived out of England, malaria may be excluded.

(6) *Cerebro-spinal fever* may be met with in its sporadic form. Occasionally there may be an absence of the signs for some days, or even weeks; no stiffness of the neck or retraction of the head, no change in the "reflexes" and, indeed, no signs of meningitis. A persistent headache, with pains in the back and limbs, and progressive loss of flesh—typhoid fever being excluded by a negative Widal and the presence of a leucocytosis—should lead to a lumbar puncture and a search for the meningococcus. A young adult suffering from this disease has been treated for two or three weeks for rheumatic fever on account of the severity of his pains. An intensely sour odor of the sweat, which was profuse, increased the simulation.

(7) *General tuberculosis* is a rare cause of fever in patients who show no physical signs. According to the text books, this is not so, and the physician has not infrequently to discriminate between it and such a disease as typhoid fever. Undoubtedly cases do arise in which general tuberculosis occurs (for some days up to two or three weeks) without evidence of focal lesions, but these are very uncommon. Blood cultivated on ordinary media will not reveal the nature of the infection, and even if special media be used the growth of the bacillus will be too slow in most instances to prove of service. If the condition be suspected from the occurrence of leucopenia and the absence of agglutination reactions for the typhoid bacillus and the *micrococcus melitensis*, films should be

SURGERY.

Injections for Gonorrhœa.

ALTHOUGH injections of hydrogen peroxide were advocated by DR. LOWE in the treatment of gonorrhœa some years ago, the method does not appear to have received general recognition. According to DR. A. SKOULSKY, however, most satisfactory results are obtained by these urethral injections, and he ascribes their success to the power of diffusion as well as the bactericidal properties of hydrogen peroxide. They are at the same time much less irritating to the mucous membrane than the silver preparations usually employed. Several cases of acute and chronic gonorrhœa are reported in detail in which the treatment was successfully employed. In one case the patient had suffered from a chronic posterior urethritis for three months, and the usual injections of silver nitrate, permanganate of potash, etc., had failed to cure. The author commenced with injections of 20 c.c. of hydrogen peroxide diluted to half strength twice a day, the fluid being retained for three minutes. The amount was gradually increased to 50 c.c., and at the same time the strength was gradually increased till the hydrogen peroxide was injected undiluted. At the end of a fortnight the patient was cured, and bacteriological examination of the urine was negative and remained so. Another case is recorded in which a chronic posterior urethritis was of three years duration, and similar treatment for a fortnight also resulted in a cure, with complete disappearance of the gonococci in the urine. In acute cases the author does not advise the injections till the second or third week.—*The Hospital*.

Alcohol Disinfection of Hands.

According to the observations of Professor SCHUMBURG a surgeon on the general staff of the German Army reported in the *Deutsche Medizinische Wochenschrift* washing the hands with strong alcohol is a most effective means of removing all infection and rendering any bacteria innocuous. This author states that 200 c.cm. of alcohol applied with a pledge of cottonwool are sufficient to disinfect the hands to the extent of 99 percent. or more of all bacteria present. Ordinary methylated spirit is quite effective. From experiments in the medical department of the Prussian Ministry of War it appears that washing with soap and water combined with even prolonged scrubbing with a brush does not remove the microbes, the soap softening the skin and making the bacteria more adherent. Alcohol, on the other hand, by hardening the skin causes the bacteria to become rapidly detached. To secure proper disinfection with alcohol the preliminary use of soap and water must be dispensed with, the reasons given being that the residual moisture, even

after drying, dilutes the alcohol, and further that the softening of the skin by water causes it to contract too strongly when the alcohol is applied, and by rendering it rough and scaly encourages the transference of bacteria from the surgeon's hands to the wound. Inasmuch, however as the wearing of gloves for operations has been now so generally adopted, disinfection of the hands has not the same importance that it once possessed for the success of aseptic surgery.—*The Hospital*.

Perforation of the Epigastric Artery during Paracentesis.

G. FOY and H. WOIMANT.—In cases of ascites French surgeons perform paracentesis at the middle of a line joining the umbilicus and the anterior superior spine of the ilium, in order to avoid the risk of wounding the epigastric vessels. However, several fatal cases of injury to the vessels have been recorded. In the following case life was saved only by immediate operation.

A woman, aged 48, had alcoholic cirrhosis with ascites and œdema of the legs. The abdomen was much distended and dyspnoea necessitated paracentesis, which was performed midway between the umbilicus and the left anterior superior iliac spine. In half an hour 11 litres of bile-stained fluid were evacuated without incident, but on turning the patient on her left side the trocar was slightly displaced. A few drops of bright blood escaped but on pushing the cannula a little deeper, more ascitic fluid flowed, and on withdrawing it a small quantity of blood issued from the puncture. The possibility of injury to the epigastric artery caused the patient to be carefully watched. An hour after the operation she became faint, with signs of internal hæmorrhage. There was slight pain in the left iliac fossa and the whole of the left hypochondrium had become dull on percussion and lost its suppleness. An incision 8 cm. long was made parallel to Poupart's ligament and 1 cm. below the puncture, which was opposite its middle. On dividing and separating the muscles a large sub-peritoneal cavity was opened, extending from Poupart's ligament to the umbilicus and across the middle line. This cavity was filled with clots, on removing which the epigastric artery was exposed. It had not been divided but perforated by the trocar and was easily tied on each side of the injury. From the puncture of the trocar in the peritoneum issued slightly blood stained ascitic fluid, but the abdomen was not opened. The wound was sutured and drained. Union by first intention took place without further incident.

This case, like previously reported cases, shows that when the abdomen is greatly distended, the epigastric vessels may be displaced out-

wards and the site of puncture adopted be too near the middle line for their safety. It would be better to puncture at the junction of the outer and middle thirds of the line joining the umbilicus and iliac spine where the only vessels exposed to injury are the terminal branches which supply the subcutaneous tissue and muscles. Paracentesis may also be safely performed midway between the umbilicus and the pubes, the bladder being previously emptied.

In cases of injury to the artery by a trocar the withdrawal of the instrument may be followed by the escape of arterial blood in which case the diagnosis is easy, but more usually the hæmorrhage is limited to a comparatively slight oozing which does not arouse suspicion in view of the rarity of the accident. Such oozing should be regarded as an indication for the close supervision of the patient, and preparations for operation, in the event of signs of internal hæmorrhage developing. Should operation be necessary it is better not to cut down directly over the site of the puncture, as the injured portion of the vessel may be obscured by the extravasated blood, but rather below it so that the hæmatoma may be drained if required. The best incision is that recommended by Parabenf parallel to and a finger-breadth above Poupart's ligament, about 6 or 7 cm. in length, its middle being a finger-breadth internal to the middle of the ligament.—*The Medical Review*.

**Suppurative Appendicitis with Complete Sloughing
of Appendix and Fecal Discharge through
Wound for Ten Weeks.**

BY

G. F. BLAUVELT, M.D.
NYACK, N. Y.

G. W., adult, seen in consultation June 19, 1909, had been in bed one week with pain in right side about McBurney's point. Chilly feelings; temperature varying 99 to 101; frequent nausea. Had several slight attacks before. Mass felt in right iliac region, quite painful on pressure, also much tenderness in right lumbar region. Operation was advised and patient sent to the hospital next morning and operation performed at 8.30 A. M. Drs. Leitner and Kline assisting, Dr. Maynard anæsthetist. Incision through right rectus opening a large abscess cavity containing nearly a pint of stinking pus. In the bottom of this cavity the appendix was found completely sloughed away, only peritoneal coat remaining holding three large fecoliths. The rotten cavity extended upward to lower pole of right kidney. The rotten

appendix was picked out of the wound, the cavity cleaned and a large drainage tube put into the bottom of the cavity and the wound partly closed. The intestinal contents discharged freely and entirely through the incision for several weeks, when some fecal matter passed per rectum. After the fifth week the discharge through incision began to decrease and for two or three days at a time there would be very little fecal matter passed through the wound. During the whole time the patient was under treatment he had at intervals of seven days a chill with nausea and headache and followed by fever for two days. These attacks were followed by a free discharge of pus and fecal matter. These attacks were considered to be the result of suppuration in the infected area. At the tenth week the wound seemed entirely closed and we hoped it would remain healed, but a sharp chill came on with pain in right side just below the kidney. There was nausea with fever for two days when a sudden deluge of pus and fecal matter came from the wound. After this all symptoms subsided, the wound healed rapidly and has remained healed, and patient feels very well.

This case is reported to illustrate the fact that very large lesions in the intestine following appendicitis abscess, will heal without secondary operation if nature is given a chance.—*New York State Journal of Medicine*.

Lime Water in the Treatment of Warts.

D. KENNARD, F. R. C. S. E.—A young woman had been suffering for 3 years from warts on the hands. There were at least 300 or 400 warts on the back of each hand and wrist, but none on any other part. Calcium Chloride, Calcium Iodide, and Liq. Arsenicalis were given internally and applied locally without effect. Cauterisation with Acid Hydrarg. Nit. Dil. caused some of the warts to disappear and then the patient took to applying it herself. Some of the caustic got on the healthy epidermis and œdema of the hands developed. As progress was unsatisfactory she was sent to a dermatologist, who for 4 months tried various remedies, including Magnesium Sulphate internally, Liq. Carbonis in alcohol locally, and x-rays. All these having failed he scraped the warts and applied pure carbolic acid. This caused the warts treated to disappear, but fresh crops appeared and the patient returned to the writer discouraged. As local treatment had failed he fell back on an old remedy which has fallen into disuse—the administration of half a pint of lime water daily for a week. In 4 days all the warts disappeared and 2 months later no fresh outbreak had occurred.—*The Medical Review*.

Treatment of Soft Chancre with Saturated Alcoholic Solution of Carbolic Acid.

BODER.—The soft chancre has little or no tendency to heal spontaneously, and must be transformed into a simple ulcer before cicatrization takes place. This is effected by the use of an antiseptic sufficiently powerful to destroy the bacillus of Ducrey after a few applications. Carbolic acid is an excellent application for this purpose when used in saturated solution in alcohol. Ordinary carbolic lotion is not strong enough to destroy the organism in a short time and thus prevent the inoculation of neighbouring parts. Strong aqueous solutions are too powerful, and may lead to gangrene, and even produce general symptoms by absorption. Alcohol does not dissolve much of the active agent, and its effects differ in that the solution rapidly evaporates, leaving the carbolic acid in contact with the diseased surface. The sore must be freed from pus by washing with hydrogen peroxide or other mild antiseptic solution, and thoroughly dried with cotton wool. The alcoholic solution of carbolic acid is then applied with a probe dressed with cotton wool, taking care the amount of wool employed is sufficiently small to allow the whole surface of the ulcer to be thoroughly cauterised. A light application is all that is required, but all deep or undermined portions of sore must be searched for and cauterised. It is not desirable to cover the cauterised surface with a dressing, whether dry or moist. By allowing free exposure to the air evaporation is hastened, and pain is lessened. Should the pain prove acute it may be avoided by the previous application for a few minutes of a tampon of wool saturated in 1 in 20 solution of cocaine. As the vaginal secretions interfere with the healing of the sore, it is advisable to cleanse the vagina by an injection of permanganate of potash before cauterising the ulcer. In order to prevent auto-inoculation the cauterisation should be repeated daily, but in 5 or 6 days granulations, and a line of epithelium at the margin of the ulcer, should appear. The sore may then be powdered with dermatol and cicatrization rapidly takes place. When the ulcer becomes healthy the swelling of the inguinal glands rapidly subsides.—*The Medical Review.*

The Local Application of Salicylates.

BY

W. BESSEX WYNTER, M.D., B. S., F. R. C. P., F. R. C. S.,
Physician to the Middlesex Hospital.

DR. WYNTER offered some suggestions to show that the local application of soluble salicylate—more particularly the salicylate of

methyl—might be more efficacious, especially in local rheumatic disorders, than the more usual form of administration by the mouth.

As an instance he cited the case of two youths now in the Middlesex Hospital who developed signs of pericarditis while convalescing from an attack of rheumatic polyarthritis and still taking salicylate of soda, which subsided in three days under the application of salicylate of methyl to the præcordia. In connection with pericarditis he wished to draw attention to a very important indication which seemed to have been hitherto overlooked, as it was not mentioned in the published accounts of the disease. That was loss of abdominal respiratory movement. The association was so constant that, on the one hand, this sign should always lead to examination of the pericardium, even when there was nothing else to call attention to morbid state of that sac; and, on the other hand, when such respiratory movement was definitely present, doubtful indications of pericarditis might be disregarded. A very striking instance of this connection between loss of abdominal movement and pericarditis was furnished in the case of a friend's butler who was seized with acute epigastric pain while waiting at dinner. Absence of abdominal movement was so conspicuous that the man was thought to have a perforated gastric ulcer. Other signs being absent and the pain diminishing with rest in bed, this view was abandoned, and on the following day, feeling much better, the man got up and went out of his own accord. The pain, however, returned with increased severity, and on further examination a pericardial rub was obvious on the third day. He was admitted to hospital, and made a good recovery under treatment by salicylate of methyl locally, but for quite a fortnight there was no return of abdominal movement.

THE EFFECT IN CASES OF PERICARDITIS.

Experience of these and other cases showed that important secondary lesions resulted from suspended action of the diaphragm, for it was not a definite paralysis. First among them was loss of function of the lower lobes of the lungs with some degree of collapse, respiration being carried on entirely by the upper lobes, by movements of the front of the chest. Then there was passive dilatation of the stomach, and to a less extent of other hollow viscera, and finally difficulty in evacuation of the bowel, owing to the embarrassment caused to respiration by sustained contraction of the abdominal muscles when the diaphragm was yielding and ready to mount into the thorax. These effects were not merely inferred, but demonstrable by means of the x-ray screen, which showed the diaphragm to be stationary in a raised position, and

also enabled the upward movement of the kidneys, and even of opaque masses in the intestine, with each inspiration, to be seen.

These remarks, important as their bearing was on the recognition of a serious and obscure disorder, were somewhat of a digression, for the object of mentioning pericarditis was to place it first in the list of disorders satisfactorily treated by the local application of salicylates. The actual plan adopted was to spread an ointment composed of gaultherium oil ziii . in an ounce of lanoline on lint and apply it continuously over the præcordia. That the medicament was rapidly absorbed was proved by the detection of salicylates in the urine within half an hour. No local irritation was produced, and the only inconvenience resulted from the rather penetrating odour and the presence of grease on the chest interfering with examination. But these were trifles compared with the benefit accruing, and were easily averted by changing the dressing.

It is hardly necessary to state that this mode of treatment was particularly applicable to rheumatic pericarditis, which was, however, by far the commonest. Rapid subsidence of the inflammation probably exercised an important influence in diminishing the formation of adhesions and extension to the fibrous sac and myocardium, and so limited the later serious consequences of pericarditis. Where effusion occurred the fluid rapidly disappeared under similar local treatment, and it might be of interest to record that in such cases the loss of abdominal respiratory movement, though obvious, was not so complete as in plastic exudation, and examination with the x -ray screen showed such effusion clearly, the outline being distinguished from that of a dilated heart by absence of contractile oscillation.

Further examination of these cases showed that some effusion sometimes existed at the sides and back of the heart, where no corresponding signs were afforded by the ordinary means of clinical observation.

SOME OTHER INDICATIONS.

As a sequel to ordinary rheumatic polyarthritis, it was not unusual to find pain with stiffness and even swelling persisting in some one joint, after the general fever had subsided. In such cases the local application of salicylates appeared often more efficacious than the continued administration by the mouth, and offered the advantage that the curative effect could be thus maintained, without causing the nausea, prostration, and deafness which were liable to attend the former when unduly prolonged.

Many cases of sore throat—faucial injection and follicular, or parenchymatous tonsillitis commonly attributed to rheumatism—responded rapidly to a compress extending to the angle of the jaw composed either of the ointment of gaultherium or of a hot fomentation to which a drachm of the oil had been added.

Perhaps of all the disorders affected by this application none showed such marked improvement as erythema nodosum. In the ordinary way the blotches subsided spontaneously in the course of two, four, or six weeks, being unaffected by remedies and prolonged by repeated outbreaks. The local application of methyl salicylate with menthol as an ointment relieved the discomfort at once and induced immediate subsidence within a week, no fresh blotches appearing. One curious feature during convalescence was the tendency of the patches to turn temporarily a blue colour after the patient had been up for a while, as though paralytic dilatation of the capillaries permitted the stasis of venous blood which subsided in a short while after resuming the horizontal position.

The widest application, however, of this mode of treatment occurred in the various aspects of fibrositis due to sub-acute rheumatism affecting nerves, muscles, aponeuroses, and bursæ. Sciatica, brachial neuritis, facial paralysis, and other varieties of local trouble due to rheumatic changes in nerve sheaths usually responded rapidly to continuous application of the ointment in severe cases, or its intermittent inunction in mild ones, without much local tenderness. Muscular rheumatism, stiff neck, pleurodynia, lumbago, and teno-synovitis, mostly in young people, disappeared rapidly under the influence of one of the liquid preparations.

Bursitis was often a rather puzzling complaint, causing pain and tenderness, which were not referred actually to a joint, though often in close proximity; the neighbourhood of the shoulder, hip, elbow, knee, or tuber ischii being common sites. One of the least known was the middle of the calf, where a large bursa existed between the soleus and gastrocnemius, which was liable to inflammation from over-exertion or exposure to wet and cold.

The useful influence of salicylate was not, however, restricted to rheumatism, for, as sodium salicylate internally was of service in acute stages of gout in reducing fever and pain, so the local application of methyl salicylate was one of the best curative agents for acute gout, particularly in one part, such as the foot; a hot fomentation containing a drachm of gaultherium oil, or one of its preparations with menthol, was the best thing to apply.

After enumerating these many conditions in which the local application of salicylates was of service, it only remained to mention the preparations which were available.

The stock remedy was an ointment of two drachms olei gaultherii in an ounce of lanoline, with the addition of 15 grains of menthol where

an anæsthetic effect was required. Antiphlogistine served as a useful poultice, containing sufficient methyl salicylate to be effective.

A mixture of methyl salicylate with menthol made into a thin ointment was sold in collapsible tubes as anæsthon, a convenient remedy for inunction in mild affections, especially chilblains.

The liquid preparations were mesotan, kasemol, and betul oil.

Kasemol, a vinegar-like fluid, was one of the least objectionable in regard to odour and absence of grease; mesotan was similar, but irritating, and best used as a liniment with an equal quantity of olive oil. Betul oil was nearly pure methyl salicylate.—*The Hospital*.

OBSTETRICS AND GYNÆCOLOGY.

Galvanisation of the Thyroid Gland and the Menstrual Function.

P. GALANTE says that there is a special relation between the diseases of the thyroid gland and the functions of the sexual organs. This is shown especially in exophthalmic goitre, in which the disease is accompanied by lack of sexual desire in the male and even impotence, and in the female by disturbances of menstruation. In the initial period of high tension there is metrorrhagia, while in the stage of cachexia amenorrhœa takes its place. The author details three cases of goitre observed by himself in which these relations were well shown. These cases demonstrate the necessity of early intervention in the treatment of exophthalmic goitre in order to obtain a cure. Galvanisation of the thyroid gland has a marked influence on the menstrual function. The presence of pregnancy in this disease makes it necessary to use the greatest prudence in the use of this treatment, since abortion may be produced. In cases of dysmenorrhœa accompanied by hyperthyroidism, galvanisation of the thyroid gives surprising results. The author believes that if this treatment be made use of in the acute psychoses which accompany Basedow's disease and disturbances of menstruation it will have an excellent effect.—*The Medical Times*.

Veratrum Viride in Puerperal Eclampsia.

A very interesting article in support of veratrum viride in puerperal eclampsia is contributed by DR. J. L. ARCHAMBAULT (Feb., 1910). This drug combines the valuable properties of inducing vaso-dilatation and hypo-tension, profuse perspiration, copious diuresis, emesis, and often catharsis. Then the high blood pressure which allows of the free circulation of toxic products is eliminated and

the very toxins to which the convulsive seizures and coma are attributable are removed. The author recommends the exhibition of the drug in heroic doses. The fluid extract should be used hypodermically in 20 to 30 minim doses. To get the convulsions to stop, the pulse must be slowed to 60 or under and kept there for not less than 24 hours. Since 1902 the author has substituted treatment with this drug for the induction of labor and the administration of chloroform.—*The Canadian Practitioner and Review*.

Eclampsia and the Weather.

Damp, bleak weather and the sultry and humid weather seem to have an influence on the incidence of eclampsia, as the writer shows by tables of the 262 cases of eclampsia at the Berlin Charité in the last four years compared with the weather charts. The cases in which the women present symptoms suggestive of toxæmia but without actual eclampsia should be taken into account in a study of the connection between meteorologic conditions and eclampsia.—*Ibid*

THERAPEUTICS.

The value of Acetanilide, Caffeine and Sodium Bicarbonate when used in combination.

DR. HARE in an editorial deals with the value of Caffeine and Sodium Bicarb when used in combination with coal tar derivatives in the headache powders. He believes that, whatever value lies in the Caffeine of this combination depends upon its influence upon the nervous protoplasm, more or less directly involved in the painful process, rather than in any influence which it may exert on the heart. This belief has now received experimental endorsement, because of the publication of a research by Hale in the *Journal of Pharmacology and Experimental Therapeutics* for August 1909. This investigator has shown conclusively, that Caffeine is of little or no benefit in Acetanilide poisoning, and in some cases seems to exert a harmful effect, neither the heart nor the blood pressure being maintained when these functions are depressed by full doses of Acetanilide combined with Caffeine. The small amount of Sodium Bicarbonate (3 to 5 grains) used in such powders can exert no antacid effect. That this ingredient is, however, an advantageous one, is proved by Hale's investigation. He finds that Sodium Bicarbonate seems to lessen the toxicity of Acetanilide both in isolated heart, and upon the intact animal. In other words, its use in such powders is advantageous not as an antacid, but for the purpose of controlling the circulatory influence of the Acetanilide.—*The C. M. J.*

Quinine.

In our opinion quinine has very little or no influence on the pregnant uterus, and when a pregnant patient has malaria, no hesitation whatever should be felt in administering quinine. In fact a malarial patient who is not treated with quinine is more apt to abort than when so treated.—*The C. M. J.*

Cactus vs. Digitalis.

In a recent article entitled "When Not to Use Digitalis," Professor H. H. Hare, after pointing out certain conditions in which the drug not only will do no good but will actually cause harm, adds: "When a patient with a feeble heart is given digitalis, it may be, to overcome this feebleness, when in reality the cause of the feebleness lies in a degenerated heart muscle which is incapable of gaining any advantage from this drug; the drug, by contracting the blood vessels, actually increases the labor of the heart. In such cases the drug to give is *cactus*, the action of which is *cardiac*, and slightly if at all vascular." As to the accuracy of this, any physician of experience will attest. In such cases *cactus*, in the form of Cactina Pillets will answer an admirable purpose, and not only these, but under many other widely varying heart conditions where there is no need to use the more powerful but also *harmful* drug. Indeed, we would use Cactina Pillets every time, unless the case was an emergency one where what was done must be done quickly. We also use it in every case where there is the least reason to expect it—for it is notorious that digitalis is apt to produce digestive disturbances which demands its discontinuance. In all such cases Cactina Pillets act admirably.—*The C. M. J.*

Aloe Leaf as a Substitute for Ice.**ALOE VERA OR INDIAN ALOE.**

The skin of the aloe leaf is to be removed and the pulp which resembles ice to a great extent is to be applied (covering the whole of the head) in the morning, and it will keep cool the whole day with a little fanning; the second application after sunset will last the whole night.

It costs nothing, but is "worth its weight in gold" in time of sickness, especially in out of the way mofussil places where ice is a rare commodity and cannot be procured "for love or money."

Abridged by
JOHN DEVASIGAMONY,
Sub-Asst. Surgeon.

A Substitute for Potassium Iodide.

Owing to the expense of Potassium Iodide it has been suggested that small doses of Tincture of Iodine, well diluted, would have the same therapeutic effect. Iodine appears to be absorbed in the stomach, partly as an albuminate, but chiefly as Sodium Iodide, and this combination with sodium occurs also to some extent in the blood. Alkaline Iodides are either absorbed unchanged or as Iodide of Sodium.

Abridged by

JOHN DEVASIGAMONY.

Sub. Asst. Surgeon.

HYGEINE.**Mosquito Traps.**

ACCORDING to a French officer in Africa he observed mosquitoes issuing at sunset from crab-holes in the ground, and from that fact conceived the idea of constructing artificial holes of a similiar nature to trap the insects. The mouth of the hole, an inch in diameter and rectangular in shape, leads into channels some 18 inches deep, forming an acute angle with the surface. The mouth of the hole is so disposed as to be sheltered from the wind and sun. These traps were found to be highly successful, and it is suggested that wooden imitations might prove useful for indoor use.—*The Hospital.*

Effect of Blue Color Upon Flies.

MARKRE and FE observed that cow stables, the walls of which had been painted blue, were evidently avoided by the common house fly. It is therefore recommended, in order to keep the flies away from the stables, to paint the walls once or twice yearly with chlorinated lime solution to which some ultramarine blue has been added—10 lbs. of lime and 500 grs. ultramarine blue in 100 litres of water.—*The American Journal of Physiologic Therapeutics.*

PÆDIATRICS.**The Prevention of Constipation in Women and Children.**

By

SIR JOHN BYERS, M.A., M.D.

Women who are subjects of constipation complain of head-ache, dizziness, a feeling of heaviness, loss of appetite, and a condition known as nervous sluggishness. One sometimes also finds in such patients flatulent distension, the presence of a sallow or muddy complexion, skin

eruptions of an acne type; and in young women, at that particular age between the advent of menstruation and the consummation of womanhood, a form of anæmia is sometimes met with which is of chlorotic type, with amenorrhœa. In these latter cases the administration of Iron, say Bland's Pills, totally fails, but tonic aperients succeed. Sir Andrew Clark thinks that feculent retention is not only the rule but the characteristic sign and the cause of these cases of chlorotic anæmia. But this is carrying the theory too far, though it must be admitted that nothing short of getting rid of the underlying constipation by tonic aperients coupled with proper food, suitable exercise and healthy hygiene will effect a cure.

PREVENTION OF CONSTIPATION.

In Women.

(1) FOOD:—(a) Avoidance of concentrated animal foods which are almost entirely absorbed.

(b) The use of vegetables, nuts, salads, brown bread, oatmeal porridge (properly made from crushed oats and not the rolled oats, and fruits; also certain articles as butter, honey, marmalade, buttermilk and olive oil.

(c) Free ingestion of water either at the beginning or end of the meals or a tumblerful of warm fluid sipped night and morning.

(2) EXERCISE.—Walking, riding, cycling, hockey, golf or other games.

When active exercise cannot, for any reason, be taken, passive exercise, in the form of abdominal massage and, in young women, a dry towelling of the abdomen and back at night before putting on night garments.

(3) Regular daily habit in evacuating the bowels.

In Children.

In the case of Breast-Children.—The use by the mother of fruit, vegetables and other forms of aperient food combined with regularity in feeding her infant.

Bottle-fed Children.—Addition of more barley water, and less milk, in each bottle, or the addition of more sugar or of cream, or of extract of malt—at other times a little fresh grape or orange juice between meals will be useful. If infant is over 6 months, some boiled oatmeal may be added to the bottle, and after one year butter, porridge, vegetables and fruit, as apples, etc., pulped and stewed may be given. Water should be supplied between meals, allowing the infant, with all its clothes undone, to kick and use its arms freely.

Massage of the abdomen by the mother round and round in the direction of the colon with the hand lubricated with olive or castor oil.

Abridged by

JOHN DEVASIGAMONY.

Sub. Asst. Surgeon.

Cases and Comments.

Case of Cholera or Worms?

By

N. V. MOODLIAR, L. M. S.,

Medical Officer, Mangalvedha near Pandharpure.

Ahamad, a strong healthy young man of 20 years, was on his way back from Hyderabad to Kolhapure, with 4 friends. They came here on 24-4-09 and all of them had diarrhœa. Ahamad was apparently quite well till 12 at night, when he began to vomit and purge.

25-4-09.—5 A. M.—The patient was brought to me at about 5 A. M. when in my presence he vomited and purged once, the stools having the characteristic colour and appearance of cholera. He was immediately admitted as an inpatient. Patient is extremely weak and exhausted. Body cold; eyes sunk; cannot speak. Has cramps, especially in the calves of legs.

R.—Mist. Cholera without opium 3 iii.
Acid Carbolie ms. 3.
Aqua 3 iii.

M. $\frac{1}{4}$ part every hour as required. Apply oil of turpentine to calves of legs and rub well. Keep body warm and well covered.

Give Santonin gr. 3.

Statum.

8 A. M.—Vomited and purged thrice.

12 NOON—Vomited and purged thrice.

3 P. M.—Slightly better; no vomiting, but purged once.

6 P. M.—Better; no vomiting and no cramps. Bowels moved once; stools not so liquid as before.

9 P. M.—Better.

10 P. M.—Better. For diet he was given small quantities of thin boiled rice water and milk. Thirst was great, so he was given small quantity of cold water every now and then.

26-4-09.—5 A. M.—Much better; no vomiting. Bowels moved once during night; stools seem solid. Voice now audible. Speaks a little. Feels much better, but passed a bad night.

8 A. M.—Took a little thin sago conjee. Feels better. He was now given half an ounce of brandy in a little water.

2 P. M.—Vomited and purged once; passed a big round worm. Passed urine now, that is about 33 hours after admission; till then he did not pass any urine. He took the abovementioned cholera mixture without opium in all 3 ounces, out of which perhaps even two ounces he did not retain. He was now given Santonin 3 grains with 6 drops of chlorodyne with a little water.

5 P. M.—Same. Purged once.

R.—Chlorodyne 6 drops

Aqua 3 i.

M. Statum.

9 P. M.—Vomited twice and purged thrice.

R.—Chlorodyne 10 drops.

Aqua 3 i.

M. Statum.

12 P. M.—Vomited 6 times and purged 6 times.

R.—Acid Carbohc drops 2.

Chlorodyne m. 5.

Aqua 3 i.

M. Statum.

27-4 09.—This was vomited immediately.

5 A. M.—Vomited thrice and purged 5 times.

7 A. M.

R.—Gutta Cocaine m. 5 (2 grs. to 3 i.)

Tinct. Opium m. 5.

Aqua 3 i.

M. Statum.

8 A. M.—Vomited and purged twice; passed 2 large red round worms. The above Cocaine and Tinct. Opium mixture was given again with Santonin gr. 3. Mustard was applied to the pit of the stomach.

12 NOON—Vomited thrice and purged twice. Passed 3 round worms. Passed urine well. Repeat above Cocaine mixture with Vinum Ipecac drop i. Diet thin sago conjee only.

3 P. M.—Vomited twice and purged once. Passed one large red round worm. Repeat above Cocaine mixture.

6 P. M.—Vomited thrice and purged twice small quantity at a time. Passed two round worms. Passed urine.

R.—Beechwood Creasote drops 2.

Liq. Bismuth Am. Citras m. 30.

Tinct Opium drops 5.

Aqua Chloroform 3 i. j.

M. Statum.

9 P. M.—Vomited twice and purged twice small quantity at a time. There is much retching.

Give above Creasote mixture once now.

28-4-09—5 A. M.—Patient is sleeping.

6 A. M.—Patient says that he vomited and purged thrice during the night, but his attendant says that he vomited and purged only once. Slept badly. Passed 2 round worms. Passed urine.

7 A. M.—The above Creasote mixture was given again, and mustard applied to the stomach.

10 A. M.—No vomiting; purged once; passed one round worm.

3 P. M.—No vomiting; purged once; passed one round worm. Is a little better. Continue above Creasote mixture with Tinct Digitalis m. 10.

6 P. M.—No vomiting. Had one thin slight motion.

9 P. M.—No vomiting, but there is much retching. Had one thin slight motion.

29-4-09—2 A. M.—Had one slight motion. As there was much retching he had two doses of the above Creasote and Opium mixture during the night. Did not sleep well.

6 A. M.—Vomited and purged once; passed two round worms.

R.—Beechwood Creasote m. 5.

Tinct Opium m. 10.

Liq. Bismuth Am. Citras m. 90.

Acid Hydrocyanic dil. m. 10.

Vin. Ipecac m. 2.

Vin. Pepsine 3 i.

Spt. Menth. Pip. m. 10.

Aqua Chloroform 3 iv.

M. $\frac{1}{4}$ part every 4th hour as required and as directed.

Apply mustard to stomach.

Give Santonin gr. 3.

Statum.

8 A. M.—Vomited medicine and purged once. Passed urine.

9 A. M.—Give one dose of the above mixture.

12 NOON—No vomiting and no purging. There is some retching.

3 P. M.—No vomiting or purging.

6 P. M.—No vomiting; bowels moved once.

9 P. M.—No vomiting or purging.

Till now there occurred vomiting and purging almost simultaneously; the evacuations were thin and very watery, and the stools had the characteristic rice water colour of cholera and the patient was kept on thin sago conjee and milk.

30-4-09—6 A. M.—Passed a fair night. No vomiting; had two liquid motions. Passed one large round worm. Took conjee thrice during the night.

R.—Pil. Argenti Nitras and Opium ($\frac{1}{4}$ gr.) 4.

One every 4th hour as directed.

9 A. M.—Purged once. Took conjee once.

12 NOON.—Purged twice. Passed 10 large red round worms.

3 P. M.—Took conjee twice. As the temperature in shade is now 112° F. the patient is very uncomfortable. Drinks a little water almost every hour and does not keep any cloth on the body. I had no means to keep the room cool. Give Chlorodyne 5 drops with the above Argenti Nitras pills.

6 P. M.—Had one small semi-solid motion.

9 P. M.—Omit above pills.

R.—Acid Sulphuric Dil. m. 20.

Tinct Opium m. 5.

„ Digitalis m. 15.

Spt. Mouth Pip. m. 10.

Aqua Chloroform $\frac{3}{4}$ iii.

M. $\frac{1}{3}$ part every 3rd hour as directed:

1-5-09—6 A. M.—Slept for about $1\frac{1}{2}$ hours only. Took conjee twice. Had 3 small motions during night. Passed urine. Vomited medicine once. Took tea a cupful. Omit all.

Give Argenti Nitras and Opium Pill ($\frac{1}{4}$ gr.) with 5 drops of Chlorodyne every 4th hour if purging continues.

9 A. M.—No vomiting or purging. Took a little conjee; as the temperature in shade is 114° F. patient is uncomfortable; so the body is occasionally sponged with cold water.

2 P. M.—Took a cup of freshly made lemon syrup with water.

3 P. M.—No vomiting or purging. The whole body was sponged out well with soap and water.

4 P. M.—No vomiting or purging. Took a cup of conjee.

6 P. M.—Better. Improving.

2-5-09—Passed a good night. Improving.

7 A. M.—Took conjee and tea with relish. Wants solid food.

12 NOON.—Had one solid motion.

6 P. M.—Much better. Had no medicine to-day.

9 P. M.—Bowels moved once. Fæces solid and normal.

3-5-09.—Slept well. Improving. Had solid food once and conjee 4 times yesterday.

12 NOON.—Improving. Ate solid food with relish and had a good appetite.

6 P. M.—Much better.

4-5-09.—Passed a good night. Improving. Bowels did not move during night.

6 A. M.—Doing well.

12 NOON. Do.

6 P. M.—Doing well.

5-5-09.—3 A. M.—Discharged at his own request. He was sent to Kolhapure along with his friends by rail.

Inoculation as a Preventive against Plague.

BY

M. GURU RAU,

First Class Hospital Asst. Tarikere, Kadur Dt., Mysore Province.

The present method of comparing the casualties among the inoculated and the uninoculated with a view to put forward the advantages of inoculation does not furnish very accurate information for the following reasons:—

1. The time at which inoculation is commenced is generally at a distant date from the time the epidemic commences. Thus the uninoculated are at a disadvantage.

2. The virulence of the disease, as observed in epidemics, generally gets less and less at its termination, and thus those inoculated at the close of the epidemic have an advantage over those that have suffered from the commencement of the epidemic. It would be just to compare the casualties among the inoculated at the close of the epidemic with the casualties among the uninoculated at that period alone and not otherwise.

3. Some people in uninfected parts of a town or a village might be inoculated and they are included among the list of inoculated people for purpose of calculating casualties.

4. Some inoculated people might evacuate the village and not come in contact with the infection at all. Nevertheless they are included among the inoculated and percentage drawn.

To meet this want and to furnish all available information about the course of the epidemic and also the amount of protective power of *Inoculation* against the disease, I have furnished this year the results of my inoculation as shown in the following form:—

NOT EVACUATED VILLAGE.

Name of the village:—Attiganall.

Population according to my own census:—270.

Date of outbreak of Plague:—13-7-1909.

Date of cessation of Plague :—20-8-1909.

The following is the course of the epidemic influenced by inoculation :—

Weeks.	Uninoculated.		Inoculated.		No. of inoculations.	REMARKS.
	Attacks	Deaths	Attacks	Deaths		
1st Week	4	2	3	..	110	
2nd	8	7	1	1	70	
3rd	1	1	..	..	32	
4th	1	..	1	..	4	
5th	1	..	4	..	30	
6th	1	3	..	..	..	
Total ..	16	13	9	1	246	

PARTLY AND MOST INDIFFERENTLY EVACUATED VILLAGE.

Name of the village :—Nandi.

Population according to my own census :—676.

Date of outbreak of Plague :—20-6-1909.

Date of information of outbreak :—1-7-1909.

Date of cessation of Plague :—22-8-1909.

The following is the course of the epidemic influenced by inoculation :—

Weeks.	Uninoculated.		Inoculated.		No. of Inoculations	REMARKS.
	Attacks	Deaths	Attacks	Deaths		
1st Week	8	8	..	..	..	
2nd	2	2	..	..	180	
3rd	..	..	..	..	21	
4th	..	..	..	..	..	
5th	..	..	..	..	..	
6th	1	1	..	..	..	
7th	3	3	1	1	120	
8th	2	1	2	..	154	
9th	..	..	2	1	26	
Total ..	16	15	5	2	501	

NOT EVACUATED VILLAGE.

Name of the Village :—Herikatur.

Population according to my own census :—163.

Date of outbreak of Plague :—5-9-1909.

Date of information of outbreak :—16-9-1909.

Date of cessation of Plague :—1-10-1909.

The following is the course of the epidemic influenced by inoculation.

Weeks.	Uninoculated.		Inoculated.		No. of Inoculations.	REMARKS.
	Attacks.	Deaths.	Attacks.	Deaths.		
1st Week.	5	3	..	..	..	
2nd	1	..	..	..	45	
3rd	3	3	..	..	64	
4th	..	..	3	..	6	
Total ..	9	6	3	..	115	

Out of 2,663 inoculated people, 25 people developed plague, of whom 7 died as shown below :—

Number that developed Plague.	The day on which Plague developed after inoculation.	Number of deaths.
1	1st day	
2	2nd day	of whom 1 died.
3	3rd day	of whom 2 died.
4	4th day	
1	5th day	
2	7th day	
1	9th day	
11	from 10 days to 2½ months	of whom 4 died.
Total 25		7

Remarks.—In all the three infected villages, practically, people stayed away from the commencement to the end of the epidemic, along with the few uninoculated; and thus the protective power of inoculation was put to severe test. The value of inoculation is evident from the results shown in the statements. I have observed that about 10 per 1,000 of the inoculated develop Plague and about 3 per 1,000 die. The results are thus very encouraging.

Prolonged Labour Delivered by Forceps.

BY

M. GURU RAO.

1st Class Hospital Assistant, Tarikere, Mysore.

The prolongation of labour in its second stage is attended with peril both to the mother and the child. The mother becomes liable to danger in this way—that the soft parts of her pelvis are subjected to continuous pressure by the presenting head, which may end in severe inflammation and in the formation of a slough followed by severe exhaustion and, in neglected cases, even in death. Again, owing to continuous pressure of the uterus on the foetus the placental circulation is disturbed, and thus the child is in danger of death.

In cases of natural labour these two effects, viz., pressure on the maternal soft parts and disturbance to placental circulation, do exist to a certain degree, but they are intermittent and thus productive of no evil. Further, each part of the parturient canal is subjected to pressure by the presenting part only for a time, but when the presenting part descends it is relieved of its pressure and soon returns to its natural condition. In a protracted labour the continued contraction of the uterus to empty its contents, on the one hand, and the absorption of toxic products from inflamed soft parts, on the other, tend to produce typhoid symptoms and death.

The cases of protracted labour are numerous. But, whatever it may be due to, a woman in labour should not be allowed to get into the condition described above. A careful enquiry into the history of the case and a watch on the progress of the delivery will obviate the occurrence of such symptoms. In other words, by a timely interference both the mother and the child could be saved, in very many instances, who, otherwise, would perish if left to nature.

I quote an instance of a case which came under my care very recently. A Brahmin lady, aged 25 years, well developed, primi-para, advanced full term, felt labour pains on the 19th August 1910. The pains gradually increased and the midwife was sent for. The midwife advised a dose of castor oil which the patient refused to take or have an enema. A local midwife (Dadi) was also sent for, and she was unable to do anything in the case. I was then sent for on the 20th at 7 A. M. I got a dose of castor oil to the patient at once and had the urine drawn out. The midwife informed me that the os was dilated to "two fingers" and the membrane was entire and that the head was presenting. The woman was quite unwilling to get examined by me just then. I allowed the case to proceed by itself and at 11 A. M. on the same day the membrane seemed to have ruptured, when the os had dilated only to "three

fingers." Whether this was brought about by itself or by the undue interference of the two midwives, I cannot say. I was again sent for at 12 noon, and was permitted to examine the patient as her relations thought the woman was in danger.

Condition of the patient.—Her pulse weak, 104 a minute. Pains irregular and weak; uterus not firmly contracted; os dilated to "3 fingers"; head presenting and fairly descended into the pelvic cavity, and the os thin and dilatable. The woman had not taken any nourishment owing to partly the anxiety of her condition and partly to nausea she was suffering from. I ordered 2 doses of chloral, each 15 grains, to be given at intervals of half an hour. This produced a little rest, after which though the pains were stronger, yet they had no effect on the progress of the delivery. I examined her again at 2 P. M. and found her almost in the same condition. I ordered warm douche to the os and a firm binder to the abdomen. The woman sternly refused to have the binder on. These measures had no effect in improving the condition of the patient. At about 7 P. M. I examined her again and found her in the same state. The pains were feeble and irregular, and the general condition worse. I decided to interfere at once and made arrangements accordingly and ordered an enema to be given at once. I had to administer chloroform as the patient was very shy and would not allow interference.

This had to be pushed on to the surgical extent. I drew out urine at once and on examination found the os dilated only to "3 fingers." I could with great difficulty introduce 3 or 4 fingers into the vagina.

The question I had to decide was, whether to apply forceps, or perform craniotomy, and extract the child. I feared that a "3 inches dilated os" was not spacious enough to permit forceps to enter. Again, if craniotomy was performed, the same difficulty would arise in extracting the child through a fully undilated os. As the os was dilatable, and as there was a chance of delivering a live child, I decided to use forceps in preference to craniotomy. The lower blade was inserted with little difficulty, but the upper one had to be manipulated three times before it could properly be adjusted.

I extracted the child without much difficulty. The child died after extraction, in spite of all efforts to save it. It must probably be due to the continued pressure it was subjected to, in the uterus.

I extracted the placenta at once after this and thoroughly irrigated the uterus with a weak solution of Hydro Perchloride, 1 in 5000, and applied a firm binder. The patient after this became quite restless and her condition caused great anxiety. I injected hypodermically strychnine, and a little later on, morphine. This gave her sleep for some time

and when she woke at about 12 o'clock midnight took some nourishment.

21-8-10.—Temperature normal both in the morning and in the evening. Complained of pain over the region of the uterus.

Treatment.—

R.—Mist. Quinine $\frac{3}{4}$ i (gr. 5).
Tinct. Opii. m. 10 (℞. ℥.)

22-8-10.—Patient much better. Temperature normal. Continued the same mixture.

23-8-10.—On the 22nd night she is said to have complained of headache and to have had slight fever. A dose of castor oil was administered, and her breasts were firmly bandaged with cotton wool on, to prevent milk formation. Temperature in the evening normal. Bowels moved freely.

From the 24th onwards the woman got better day by day. Plain quinine mixture (grs. 5 a dose, twice a day) was continued for some days as the patient was a malarial subject.

Remarks.—The cause of prolongation of labour in this case is due, as I could make out, to a pretty large head of the foetus and to the undilated condition of the parturient passages.

I send this for publication as I consider it instructive in the following points:—

(1) In all cases other than natural deliveries, a careful watch on the progress of the delivery has to be kept. If the present case had been left to nature for some time longer, only because the os was not fully dilated for instrumental delivery, surely the woman would have died of exhaustion. There is justification to presume this as the membranes had been prematurely ruptured and as there was not the least progress in the descent of the head for several hours after the rupture of the membrane. (2) That undue delay in delivery in cases of prolonged labour will kill the child. In the present case if the child had been delivered at 2 or 3 P. M. instead of 8 P. M. on the same day, I presume the child would have survived. (3) That the undilated condition of the os to a full extent should not be a bar to the application of forceps; that the want of artificial dilators of the os and the undilated condition of the os should be no excuse for leaving the case to nature for an indefinite time. Under the full effects of chloroform it is, I consider, quite possible to introduce forceps through a "3 fingers dilated os" with perfect safety to the mother and the child.

The proverb "better $\frac{1}{2}$ hour early than 5 minutes late" is well applicable to delivery cases where professional aid is necessary, and should this rule be followed, many lives may be saved.

THE ANTISEPTIC.

SEPTEMBER, 1910.

Indian Students at London Hospitals.



HIS is an age of problems. We have quite a number of them connected with India. Some problems are being solved for us by responsible statesmen. Others appear puzzling and inscrutable. And what is more bewildering is that fresh problems turn up every now and then. The latest is the "Colour Problem," as it is called by the *Daily News*, in connection with Medical Students. The colour problem is as old as the hills, and not the least interesting part of it is the way in which black began to be considered a colour, and white the absence of colour. But that is another story. Let us have the latest colour problem explained in the words of the *Daily News*. The *Daily News*, (London) of June 28th last published the following paragraphs:—

"A situation has arisen in one of the London hospital medical schools which may have developments of a far-reaching character. Following on Lord Morley's expression last year of the wish of the Government to cultivate in India the formation of a resident body of independent medical practitioners, there has been an increase in the total of native Indian medical students, such large numbers of whom have now come to England that, in some cases, they threaten, as one authority has put it, to 'swamp' the European students. Egypt and the West Indies contribute a larger number of men than formerly.

"Up to the present, with one or two exceptions, the English and Scotch medical schools have freely admitted such students. Now, however, it is stated that one of the Metropolitan hospitals is about to introduce a regulation restricting the number of 'coloured' men it will receive, owing, it is said, to the objection of some of the white students. So far there does not appear to be any disposition to adopt any such regulation at other hospitals; but a *Daily News* representative was yesterday informed that on quite other grounds the question is causing anxiety.

" 'Some of the patients in the wards,' said a Hospital School official, 'show a repugnance to be treated or have their wounds dressed by coloured students. Moreover, we can never employ them as assistants in maternity work, though they do best in that branch in the Indian Medical Service examinations. Then our hospitals here, on account of the public attitude, cannot award them house surgeon-ships or other staff appointments. When there are only a few men of colour, patients don't notice them so much; but if they are in any strength there's trouble. Still these men must be educated, and we are puzzled as to what to do.'

"It may be pointed out that four Indian Universities have power to grant medical degrees which are 'registerable qualifications' in the United Kingdom. These are the Universities of Bombay, Calcutta, Madras and Lahore. In native parlance and thought, however, only the English degree is 'pukka.'"

Similar articles have appeared in some Medical papers as well. *The Hospital*, in one of its issues of July last, had a long leading article on this subject which concluded with the suggestion that "coloured" students ought to be distributed among the different Hospitals so that each Hospital contained only a small number of them. All accounts agree, however, in one respect, namely, that the opposition to the coloured Medical students is the direct outcome of the enormous increase in the number of such students.

It appears that a small number of coloured Medical students does not excite the susceptibilities of the Hospital authorities in London, but that in large numbers they rouse their antagonism. There is a phenomenon known to chemists as "mass action." Probably we are witnessing a similar phenomenon in connection with the coloured Medical students in London. It is also interesting to note what the *Daily News* reports about the opinion of a certain Hospital School official that "some of the patients in the wards show a repugnance to be treated by coloured students." That certainly is a new development. We have had considerable experience of Hospitals in England and Scotland, both as Student and House Surgeon, and we must confess that we never came across any instance where such feelings were manifested. Even now, if such feelings are entertained by Hospital patients, they are not very generally entertained. A couple of months ago we made some enquiries on the subject in London, Leeds and Edinburgh. In Leeds and Edinburgh there was not the slightest feeling against the Indian students. In London some of the teaching Hospitals freely welcomed Indian students

while others did not. If the reasons for the reluctance of London Hospitals to admit Indian students were really based on the objections of their patients to be examined by Indian students, then we should have had all the hospitals in opposition to the admission of Indian students. Why should the patients in Guy's Hospital or St. Bartholomew's Hospital, for example, object to be treated by Indian students when the patients in Middlesex Hospital or St. Mary's Hospital raise no such objections? The development of this sensitiveness to the touch of coloured students seems to be localised in certain centres of London. The East End of London seems to be more sensitive than the West End, while the provinces of England, and Scotland and Ireland, have entirely escaped from the attack of this new nervous disease.

But all the same, we must admit that a movement against the Indian medical student in London has started. And it must also be admitted that the Secretary of State for India and his recently formed Advisory Committee are practically helpless to stop the spread of that movement. The Hospitals in London are all independent institutions, and neither the Secretary of State nor any other Cabinet Minister can make them obey his orders; so the movement is likely to spread. And if it spreads it will have, as the *Daily News* puts it, "developments of a far-reaching character." A boycott of Indian students by London Hospitals will be strongly resented by the people in India. It may possibly lead to a boycott of English medical men in India by Indian patients. It certainly will compel many Indian students to go to Germany, Austria and France for post-graduate training in Medicine and the allied subjects. The results of these developments will be very unfortunate. The Indian student in England, even with all the control that is possible over him in that country by the British Government, is a constant source of anxiety both to the Government and to the people in India. And what must be the result if, in the present state of the political atmosphere in Europe, hundreds of Indian students are driven to seek medical education in Berlin or Vienna? But we have hopes that the sound common sense and the political wisdom of the English people will prevent this new movement from taking such unpleasant directions. Indian students who intend to go to study Medicine in Great Britain need not be alarmed. We had an interview the other day on this subject with Sir William Turner, the Principal of the University of Edinburgh. Sir William Turner assured us that in the University of Edinburgh no distinctions of caste, creed or colour will ever be made. "We treat all our students alike" said Sir William, "and we expect them all to behave like gentlemen." Our advice to Indian medical students is

to go to Edinburgh and behave like gentlemen. The man who manipulates racial feeling will not be there. Edinburgh is too cold for him.

CORRESPONDENCE.

The Pay of Sub-Assistant Surgeons.

Sir,—The benign Government of India have been pleased to sanction recently a suitable title—"Sub-Assistant Surgeon"—in lieu of Civil Medical Assistant, and this decision has given considerable satisfaction to the members of this service throughout India.

As regards pay there exists still some grievances on account of it not being uniform throughout India, as it was the case formerly, and also on account of the low scale incommensurate with the position and importance of the officers. A maximum scale of pay from Rs. 30 to 100 was sanctioned, but it has been made applicable only to certain provinces, like Bengal, etc. In Madras a minimum scale from Rs. 30 to 80 has been sanctioned from 1st April 1910. There is no valid reason for this *invidious* difference in the scale of pay of Sub-Assistant Surgeons from Province to Province.

If it is desirable to make a difference at all in the scale of pay in the Provinces, it is Madras that has the foremost and preferable claim in all respects to the maximum scale of all Provinces in India.

In point of general education the Madras men of this class are considered to be the best trained and educated, being given the benefit of good medical education in English from the very beginning of their entertainment and admission into the Medical School since 1835, and unlike officers of other Presidencies where instruction was imparted through the vernacular with the inevitable defects inherent in that system.

Dr. Geo. Smith, M. D., Principal, Madras Medical College, reports about this class in his annual report for 1872-73 under date 28th July 1873 as follows:—

"It is not too much to say that the Medical subordinates of Madras are not to be surpassed in India. From the very beginning, the wise resolution was taken, and has been acted upon without intermission, to communicate all instruction through the medium of the English Language, and in consequence of this most wise resolve the *incubus* of vernacular teaching has never been felt by the institution. A great stimulus, moreover, has been given in this Presidency to the acquisition of English and the value of its Medical subordinates to the public service has been thereby doubled."

Surgeon General W. R. Browne, M. D., C. I. E., V. H. S., in his evidence before the Royal Decentralization Commission gave as his

opinion that the Madras Hospital Assistants are the best trained in India, and so forth.

Further, coming now to the cost of living, Madras is comparatively a poorer Presidency than all other parts of India. Food stuffs are being sold at famine prices for the past some years and there has been a rise of more than 60 per cent. in the price of ordinary articles of food which, though general throughout India, is more keenly felt by the more poverty-stricken people of Madras. Hence Medical subordinates cannot get such decent fees in Madras by private practice as could be easily had from the well-to-do people of other provinces in India. The present scale of pay sanctioned in Madras is an increase of only Rs. 5 per mensem in the 4 lower grades and an increase of Rs. 10 in the First Class senior grade which is confined to 2 per cent of the total strength of the establishment; whereas in Bengal the increase is Rs. 10 and Rs. 30 respectively. There is no difference in the period of medical study, and the nature of duties expected of the class is also the same throughout India. Hence the reason for giving the maximum scale to Bengal and minimum scale to Madras is inexplicable.

When the scale of pay of other classes of Medical officers, such as the I. M. S., Military Assistant Surgeon, Native I. S. M. D. and Civil Assistant Surgeon, is uniform in all provinces in India, it is not known why a varying scale of pay has been sanctioned for Sub-Assistant Surgeon class *alone*. In reorganizing the Civil Assistant Surgeon class in 1898 the Government of India set their face against the varying and unequal scale of pay *then* in force to the Civil Assistant Surgeon class in Bombay, Bengal and Madras, and made it uniform in all provinces—*vide* Home Department Resolution No. 1141-1150, dated 22nd August 1898, published in the *Gazette of India*.

When such is the policy of the Supreme Government with regard to other branches of highly paid medical service, it is really unfortunate that a contrary view is now held with regard to a poorly paid but well trained and qualified class of Medical men now known as Sub-Assistant Surgeons entrusted with *onerous* duties and responsibilities as recently testified by the Government of Bombay. It is requested that there should be no invidious distinction in the scale of pay of an equally educated class of men wherever they are employed in India.

It is therefore earnestly prayed that the benign Government will take into their consideration the above facts and will be pleased to sanction a uniform scale of pay to Sub-Assistant Surgeon class in India and thus remove the invidious distinction keenly felt by the aggrieved members of the Madras service who have every claim in all respects to

better treatment than all others of the class in any Province of India. It is also prayed that the benign Government which has decided to give a suitable designation will not also fail to give a deserving scale of pay to Sub-Assistant Surgeons in Madras and further to encourage the most deserving among them by reserving a certain percentage of Assistant Surgeon posts as "prize appointments" like Civil and Military Assistant Surgeons promoted to Civil Surgeoncies.

FAIR PLAY.

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The Polyclinic. The Bristol Medico-Chirurgical Journal. The International Journal of Surgery. The American Journal of Clinical Medicine. The Dietetic and Hygienic Gazette. The Good Health. The Indian Medical Gazette. The Practical Medicine. The Sanitary Record and Journal of Sanitary and Municipal Engineering. The Northumberland and Durham Medical Journal. The Canada Lancet. The American Journal of Ophthalmology. The China Medical Missionary Journal. The Medical Review of Reviews. The Post Graduate. The Therapist. The Canadian Practitioner and Review. The Australasian Medical Gazette. The Caledonian Medical Journal. The Montreal Medical Journal. The Monthly Cyclopædia of Practical Medicine. The Buffalo Medical Journal. The Ophthalmoscope. The Dental Era. The Interstate Medical Journal. The Medical Notes and Queries. The Calcutta Medical Journal. Folia Therapeutica. The All-India Hospital Assistants' Journal. The New York State Journal of Medicine. The Hospital. The Medical Review. The Medico-Surgical Journal. The Journal of the Out-Door Life. Bulletin Journal of the New Animal Therapy. The Journal of Practical Dietetics and Bacterio Therapeutics.—Monde Medical International Review of Medicine and Therapeutics.

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Original Articles.

*A SHORT DESCRIPTION OF THE METHODS
EMPLOYED IN THE DETERMINATION
OF THE RENAL FUNCTION IN
URINARY SURGERY.

BY

ROBERT OLLERENSHAW, M. D. (VICT.), F. R. C. S. (ENG.)

Royal Infirmary, Manchester.



URING comparatively recent times there have been great advances in renal surgery, for it is only thirty years since Morris performed the operation of nephrolithotomy which swept aside the fear of hæmorrhage from an incision through the healthy kidney tissue and demonstrated at the same time that the wound in a healthy kidney would heal without permanent damage to the organ.

The surgeon had now a valuable addition to his previously limited means of diagnosis, and renal exploration began to be generally adopted.

The introduction of Nitze's cystoscope a year later and the application of the Röntgen rays to renal lesions in 1896 gave a large contribution to exact diagnosis and more successful operation. There has always been, however, a considerable mortality from kidney operations and still, in spite of improved methods of asepsis and antisepsis and a clearer understanding as to how surgical shock should be combated, there is a certain number of fatalities due to a failure of the renal function as a result of operative interference before the value of each kidney has been properly ascertained.

Suppression of urine may follow an operation of any kind in a patient whose renal function is already impaired, but when the

* Specially contributed to *The Antiseptic*.

operation involves the urinary tract the danger is greatly increased and the question as to the secreting value of each kidney is certain to arise. When nephrectomy is proposed it is of course absolutely essential that the condition of the presumably sound kidney should be known if only to avoid such a catastrophe as the removal of the only kidney which the patient possesses, the second kidney having failed to develop or having been destroyed by disease.

But apart from removal of the kidney there are cases of bilateral disease, often of stone in both kidneys, where a conservative operation such as nephrolithotomy of one kidney is enough to overbalance the already impaired renal function and cause fatal suppression.

Formerly the surgeon was obliged to rely on clinical data in order to form his opinion as to the functional activity of the kidneys and, although not difficult in some cases, an element of doubt often remained of the capacity of the second kidney to carry on the full function. When one kidney is certainly the seat of disease, the surgeon would look with suspicion on a patient who complained of a dry tongue and skin, thirst and frequent headaches, the signs of renal insufficiency. Mistakes are occasionally made in such cases in the determination of the chief functioning kidney. A case was recently reported in one of the journals in which a surgeon was asked to see a patient suffering from marked pyuria with an enlarged and tender right kidney, upon which it was suggested that he should operate. He was able to show by separating and estimating the urine of each kidney that the enlarged right kidney was the functional organ, the left kidney being destroyed by painless calculous disease from which the pus in the urine was coming. The percentage of urea in the left urine was 1 per cent., and in the right 1.8 per cent. Examples such as this demonstrate the necessity of a routine examination of the separated urines in all cases in which there is room for doubt, and in this brief paper it is proposed to mention the various methods of carrying out this examination, laying stress on those which are at once the most practical and useful in general surgery.

The chief methods are:—

1. Estimation of the freezing point of the urine and the blood. Cryoscopy.
2. Electrical resistance of the urine and the blood.
3. Observation of the elimination of certain substances by the kidneys. Methylene blue method.
4. Estimation of the glandular function of the kidneys. Phloridziu test

5. Cystoscopic examination of the ureteric orifices and efflux.
6. Separation of the urine of the two sides—
 - (a) By a separator.
 - (b) By catheterisation of the ureters.

(1) *Cryoscopy*.—The principle involved in this method depends upon the fact that the freezing point of a liquid is directly proportional to its concentration. Normal urine freezes at from 1.5°C . to 2°C . below zero. Should the urine contain less urea than normal, the liquid will freeze at a higher temperature. The blood, when normal, freezes at $.56^{\circ}\text{C}$. below zero. If the kidneys are not functioning properly they allow the blood to remain possessed of material which ought to have been extracted and passed on into the urine. In consequence the molecular concentration of the blood rises above normal whilst that of the urine falls below normal. Roughly speaking, it is found that if the freezing point of the blood is lowered beyond $.58^{\circ}\text{C}$. and that of the urine is higher than 1°C . then renal inadequacy is present. The method is very tedious and repeated observations are necessary; in addition it is found that diet, exercise and nervous conditions have so much influence on the concentration of the urine that the test cannot altogether be relied upon.

(2) *Electrical Resistance of Blood and Urine*.—Solutions of substances in water offer a variable resistance to the passage of an electrical current according to their composition. The greater the molecular concentration of the fluid the less is the resistance to the current. An apparatus devised by Kohlrausch is arranged on the principle of Wheatstone's bridge, one cubic centimetre of the urine to be tested being placed on one side of the galvanometer and resistance coil on the other. It is found that normal urine offers a resistance of about 40 ohms; the urine from functionally inactive kidneys containing less salts offers more resistance, the urine in cases of chronic Bright's disease showing a resistance of 100 or more ohms. The electrical resistance of normal blood is about 160 ohms; in renal insufficiency, the concentration of the blood being increased, the resistance is lowered. The ratio of the resistance of blood and urine is sometimes termed the "hæmorenal salt index." In health this would be $\frac{160\text{-resistance of blood}}{40\text{-resistance of urine}} = 4$. An index below 3 is suspicious and contra-indicates surgical interference; below 2 it is serious.

(3) *Methylene Blue Elimination*.—If methylene blue is administered to a normal individual it is excreted by the kidneys, and is found in the urine after about 30 minutes; the excretion continues for

two, three or even four days and passes off gradually. The blue is often given by the mouth in the form of a pill, but a better method is that of intramuscular injection, 15 minims of a 5 per cent. aqueous solution being injected into the muscles of the buttock. By this means the absorption is more certain and steady than it would be from the stomach and intestine. There is usually a little pain as a result of the injection, but this passes off in a few minutes.

In the living tissues methylene blue is absorbed as a colourless derivative and circulates as such in the blood, the chromogen being transformed to blue again in the kidney causing the urine to become green or blue according to the amount of dye it contains.

The patient should be asked to pass urine at the time the injection is made; 15 minutes later the bladder should be emptied again, by catheter if necessary. The urine should be collected in a clear glass vessel and examined against a white background. At the end of the first 15 minutes it will probably be of a normal colour—in a further 15 minutes it will generally be found to be green and from that time onwards it will become deeper in colour till it reaches the maximum in about 6 hours, the whole being excreted normally in from 35 to 60 hours. In a patient suffering from badly-functioning kidneys the excretion of the colouring matter may be delayed for 2, 3 or more hours. If an amount of the substance is being excreted which is too small to cause a colouration it can be recognised by the addition of a few drops of acetic acid with subsequent boiling; this procedure at once brings out the blue colour even if only a small trace is present.

If one desires to use the test for the total urine of both sides a catheter may be passed into the bladder and tied in; for the separated urines of the two sides each ureter may be catheterised or one ureteral catheter passed and a small Jacques' catheter passed into the bladder alongside it to collect the urine of the other kidney. After the administration of methylene blue the cystoscope can be used to observe the efflux from each ureter and to note the time of the appearance of the colouring matter in each urine.

This procedure is sometimes referred to as "colour cystoscopy."

(4) *The Phloridzin Test*—A glucoside is a crystalline body which when subjected to the action of enzymes splits up into glucose and other substances (alcohols, aldehydes, etc.).

Phloridzin is a glucoside containing 40 per cent. of dextrose and when administered to a patient it causes glycosuria. If the patient possesses normal kidneys sugar is found in the urine in from 15 to 30 minutes after the administration. 15 minims of a 1-200 solution of

phloridzin (corresponding to 5 milligrammes of phloridzin) is injected hypodermically and the urine is examined after 15 minutes. In a healthy patient the excretion will probably have begun by this time and will progress until it reaches its height at the end of $\frac{1}{2}$ or 1 hour, the whole excretion lasting 2 to 2½ hours.

The methylene blue and phloridzin methods are most useful in cases where there is disease of the lower urinary tract, for instance, enlarged prostate cases, with secondary kidney mischief, in which the total renal function is to be estimated. The methylene blue test in this way gives quick and reliable information as to whether such an operation as a prostatectomy may be allowed with safety.

In cases where one kidney is diseased and the condition of the second is to be investigated the following procedures of cystoscopy and separation of the two urines are indicated.

(5) *Cystoscopic Examination*.—The cystoscope gives, of itself, little information of value as regards the actual functional activity of the two kidneys, but as its use must come before catheterisation of ureters or segregation of the urines it is, perhaps, as well to point out what can be learnt by its employment. As regards anaesthesia for cystoscopy and ureteric catheterisation it should be mentioned that these manoeuvres are not of themselves very painful. On the Continent, an anaesthetic is rarely given for the purpose of making a cystoscopic examination unless a painful cystitis is present; in fact patients are frequently cystoscoped and their ureters catheterised in the outpatient department. Six or eight ounces of cold, boracic lotion are injected into the empty washed out bladder. Cold lotion causes no more sensation of cold than does the taking into the stomach of a cold drink and it has the advantage of keeping the electric lamp cool for a longer period than warm lotion. With the beak of the cystoscope turned down the base of the bladder is seen, the reddish colour of the trigone contrasting somewhat with the yellowish-red colour of the rest of the bladder-wall. The trigone is limited posteriorly by a raised ridge, the "inter-ureteric bar", running transversely between the ureteric orifices.

The latter are seen normally as short red slits on each extremity of the "bar."

If the orifices be observed it is seen that at regular intervals there is a slight bulging of the termination of the ureter and immediately a little gush of urine occurs from the orifice.

The following abnormalities may be noted during such an examination. There may be no efflux from one ureter or the efflux may be blood-stained or purulent. In a poorly functioning kidney the flow

may be small and lacking in force compared with the opposite side. The ureteric orifice may be congested and œdematous as happens in cases of pyelitis and ureteritis, or it may be retracted and patent, assuming the form which was described by Mr. Fenwick as the "golf-hole" orifice which is found associated with tuberculous disease of the corresponding kidney and ureter. In this way the cystoscope may give some indication of the kidney condition, but one must proceed further to define the functional activity of the organ.

(6) *Separation of the Urine from Each Kidney.*—The principal methods are:—

(a) By means of a segregator.

(b) By catheterisation of one ureter with at the same time a small Jacques' catheter in the bladder to collect the urine of the other side.

(c) By double ureteral catheterisation.

(a) The segregator may be dismissed in a few words as it has few advantages and many drawbacks. It is supposed to require less technique than the use of ureteral catheters, but it is by no means an easy matter to introduce a Luy's segregator through the prostatic urethra. It has on it a curve which makes it a decidedly awkward instrument to pass; after its introduction a small chain which runs from the back along the free edge of a concealed rubber membrane and through the shaft to the handle is drawn tight thus raising the membrane so as to divide the base of the bladder into two lateral compartments. Opening into each compartment is a small catheter which is arranged so as to form part of the shaft of the instrument. The urine is thus collected from each lateral compartment, and if complete separation has been carried out the activity of the two kidneys may be ascertained. It is found, however, that the rigid curve of the instrument by no means fits every bladder base; in fact in comparatively few cases can a true separation be effected. Another objection is that in a certain number of cases the urethra has been very severely damaged by the chain during the withdrawal of the instrument. In order to make the separation more certain Cathelin has introduced a segregator which has a membrane surrounded by a flexible metal spring. When the spring is protruded from the instrument it expands like a racquet and adapts itself to the shape of the bladder, thus having an advantage over Luy's instrument.

(b) *Catheterisation of the ureters* is the most accurate method of collecting the urine of each side separately and, with a fair working knowledge of cystoscopy as a basis, is not a very difficult procedure.

The catheter-cystoscope in most common use is probably Nitze's instrument which consists of the ordinary Nitze cystoscope with a single or double tunnel for catheters along its upper surface.

The tunnel ends just behind the prism, and at this opening there is fitted the Albarran movable gutter which is controlled by a screw at the ocular end of the instrument. By rotating the screw the gutter can be raised from the horizontal to the vertical position and when the catheter is projected its direction is thus changed at will so that it may point along the line of the cystoscope or at an angle with it. The catheters used are about 30 inches long, and are of gum-elastic; they correspond in size to a No. 5 or 6 French catheter with the end tapered and finished with a fine olivary bulb or simply rounded. The openings are in some patterns lateral and in others terminal; there is a slightly thickened portion immediately proximal to the openings to prevent urine from passing down the ureter alongside the catheter.

The cystoscope is introduced into the bladder carrying the unprojected catheter and, with the instrument in the middle line, the beak is rotated till one ureteric orifice is seen. By now moving the ocular end of the instrument towards the opposite side of the body the beak will be observed to approach the orifice until this occupies the centre of the field and is very clearly observed. If now the catheter be projected it is almost at once seen to impinge on the bladder wall close to the ureteric opening, and by moving the whole instrument or altering the direction of the catheter by the elevating screw, it can be made to enter the orifice. It is important that the orifice should be well in view before endeavouring to pass the catheter, otherwise too great a length of catheter will become projected and the manoeuvre made more difficult. In using the elevating gutter it should never be brought too near to the vertical or it may bend the catheter acutely, thus hindering its free passage and occasionally scraping its surface. The catheter, having entered the orifice, is passed along the ureter for 5 or 6 inches; this distance is easily observed if catheters coloured yellow and black for alternate half inches are used. In order to leave the catheter in position it is now passed gently forwards whilst the cystoscope is withdrawn over it.

An important point in the withdrawal of the instrument is the lowering of the elevating gutter should this have been raised; neglect of this precaution has sometimes led to somewhat severe laceration of the urethra.

If it is intended to collect both urines a small Jacques' catheter may now be passed into the bladder alongside the ureteral catheter and left in position, or a second ureteral catheter may be passed in the

following manner. The cystoscope loaded with the second catheter is reintroduced alongside the first catheter and the process repeated on the opposite side.

If a cystoscope carrying 2 catheters be used there is, of course, no necessity to withdraw the instrument after passing the first catheter; the beak is simply rotated until the opposite ureteric orifice is in view and the second catheter is then passed.

The instrument, however, has the disadvantage of being more bulky than the single catheter-cystoscope. After each catheter is passed it should be fixed to the thigh of the same side with plaster and labelled "Right" or "Left," otherwise the two may become crossed in the urethra and confused.

With female patients no anæsthetic at all is needed for these procedures and no pain is experienced if the manipulations are delicately carried out.

In males it is usual to give a general anæsthetic or to anæsthetise the urethra by injecting 20 minims of 2 per cent. cocaine into the prostatic urethra.

Kelly, of Baltimore, has introduced "direct catheterisation" of the ureters in females; by means of passing a urethral speculum and allowing air to enter and distend the bladder it is possible to see the ureteric orifices and catheterise them. A head-light is essential for this method. Ureteral catheters may be left in position for several hours, even for 24 if required, as they cause no pain by their presence; here also the catheters have the advantage over Luy's or Cathelin's separators which cannot usually be borne for more than half an hour.

• SURGICAL URÆMIA.

BY

J. BERNARD DAWSON, M. B., F. R. C. S.

Late House Surgeon, The General Hospital, Birmingham.

The term "surgical uræmia" refers practically to uræmia due to urinary disturbances due to obstructive causes. The old term "surgical kidneys" does not satisfactorily cover the whole range of nephritic changes which may be induced by surgical complaints. A surgical kidney is one in which grave inflammatory mischief extending even to suppuration has been induced by the spread of pathogenic organisms from the lower urinary tract. But uræmic symptoms and fatal consequences therefrom may follow obstruction to the voidance of urine without any kidney change comparable to that found in "surgical kidneys."

* Specially contributed to *The Antiseptic*.

Obstruction to the flow of urine may be acute or chronic, and it may occur in any part of the urinary tract. The various forms of acute obstruction usually call so imperatively for interference that steps are taken to relieve the patient at once, whereas the chronic obstructions are so insidious in their onset and course that serious damage may be done before corrective measures are instituted.

We have therefore to consider:—

SURGICAL RETENTION OF URINE.

Retention of urine is practically always of a surgical nature, the three exceptions being—

- (a) Hysterical retention.
- (b) Post-operative retention.
- (c) Retention associated with chronic nervous disease.

Surgical retention can be subdivided into—

- (a) Acute surgical retention.
- (b) Chronic surgical retention.

ACUTE SURGICAL RETENTION.

This condition is due to numerous causes, and is found in both men and women. It causes distress, alarm and pain, and therefore is immediately brought under the notice of the medical adviser. From this reason, it follows that in civilized communities it is never the cause of uræmic symptoms. It is possible to conceive that in regions remote from medical aid, death might ensue from acute surgical retention of urine, the most probable cause of death being acute surgical nephritis following and dependant upon an acute if not gangrenous cystitis.

The causes of acute surgical retention are:—

IN MALES—

During infancy—

1. Phimosis.
2. Impacted vesical calculus in urethra.

During boyhood—

1. Impacted vesical calculus in urethra.
2. Impacted foreign body in urethra.
3. Paraphimosis.
4. Self-applied ligatures of the penis.

During young manhood—

1. Acute gonorrhœa.
2. Urethral chancre.

During middle age

1. Acute exacerbation of a stricture.

After middle age—

1. Acute exacerbation of chronic prostatic enlargement.
2. Impacted vesical calculus.

IN WOMEN—

1. Retroverted gravid uterus.
2. Pelvic tumours of varied origin.
3. Impacted calculus.
4. Stricture following obstructed labour.

CHRONIC SURGICAL RETENTION.

From the point of view of the causation of surgical uræmia, this class of retention is by far the most important.

Practically, it is a condition confined to men, women being free from it except the very rare cases of urethral stricture which occur in females.

The common causes of this most serious condition are:—

1. Urethral stricture.
2. Prostatic enlargement possibly associated with a stone.
3. Vesical neoplasm.
4. Cerebral and spinal disease.

Before proceeding to discuss the phenomena of chronic urinary obstruction as a cause of uræmia, it will be well to discuss the condition known as "surgical anuria." Surgical anuria is a comparatively rare condition and one which may, unless relieved, produce a fatal anuria. Strictly speaking, the word 'anuria' in this connection is incorrect. Anuria implies an absence of urine, whereas in the condition under notice the urine is prevented from entering the bladder. Surgical anuria must be carefully differentiated from suppression of urine caused by a diseased renal parenchyma which is unable to secrete. The two conditions have this in common—that there is no urine voided, and that there is no urine in the bladder. Suppression of urine is a terminal phenomena of long standing nephritis or a symptom of acute nephritis of non-surgical origin. These facts alone should be sufficient to differentiate it from anuria which is due to sudden and complete obstruction of both renal pelvis or both ureters, or else to sudden and complete obstruction of the only morphological kidney or only functional kidney. Thus anuria may be due to a renal calculus becoming impacted in the ureter of the left kidney, the right kidney being absent or disorganised by disease.

The kidney in such a case continues to secrete until the pressure of the urine accumulated in the pelvis and ureter is sufficient to prevent it. Thus the term anuria is not absolutely correct since there is some urine secreted but this is not able to enter the bladder.

One striking distinction between calculus anuria and suppression of urine is the slowness of onset of uræmic symptoms in the former case. There is little question that the toxic symptoms of uræmia are due not only to retained waste products but also to the products of a perverted and disturbed metabolism. In surgical uræmia this perversion of the normal processes of metabolism is wanting, so that uræmic symptoms depend for their presence upon accumulated waste products, notably urea and its allied purin bases.

It is no uncommon thing for a man suffering from surgical anuria to pass seven or eight days without voiding one drop of urine and yet show no signs of uræmic poisoning.

The writer can find a record of such a case among his own papers:—

Patient, a man aged 47, of extraordinary stout build. His previous history free from any notable feature, save for slight attacks of pain referable to both kidneys.

On admission to the hospital he was attended by the physicians who, finding no signs to support nephritis other than absence of urine in the bladder, transferred him to the surgical department.

He was carefully examined and a diagnosis made of calculus impacted in one ureter, the other kidney being atrophic from disease. It was supposed that the second ureter has been blocked by a stone years before and the kidney had atrophied, so that the man has only one functional kidney which had in its turn been thrown out of action by the blocking of its ureter. Examination by radiography shows nothing definite, the man's excessive size rendering the attempt of little use.

He was kept under examination for 4 days, during which time he remained comfortable, free from pain, sound in mind, and free from any sign of uræmia.

Since the onset of his symptoms a total of 8 days had elapsed without the passage of one drop of urine. On the 9th day slight twitching of the muscles of the forearms appeared and it was decided to operate.

The difficulty was to determine which kidney to explore. The history of previous renal trouble was indefinite and inconclusive, but

by careful analysis of the patient's story it was decided to expose the left kidney.

With great difficulty, owing to the thick layer of subcutaneous fat, the kidney was brought out on to the flank through a lumbar incision.

Examination showed the presence of a mulberry calculus impacked in the 1st inch of the ureter.

This was removed, the dilated pelvis emptied, the ureter closed, the kidney replaced, and the wound closed save for a drainage tube.

The subsequent history was uneventful, the kidney returning to its work at once.

The man was well and at work within 6 weeks of his operation.

CHRONIC URINARY OBSTRUCTION.

The two common causes of this condition which are liable to produce a condition of back pressure which will eventually lead to an uræmic toxæmia are—

1. *Stricture of the Urethra.*

A tight urethral stricture means that the bladder is never properly emptied; it also means that the act of micturition is delayed, and eventually means an hypertrophied bladder, dilated and thickened ureters, distended renal pelvis and atrophic nephritis of the kidneys.

Should a urinary tract in this state become infected by pathogenic organisms the consequences are extremely serious, and a state of suppurative nephritis may be set up which will quickly terminate fatally.

Fortunately a man possessed of a tight stricture of his urethra probably sooner or later experiences an acute exacerbation which produces complete retention.

This demands immediate attention and so the patient may be rid of his stricture and of its dependant dangers.

2. *Prostatic Enlargement.*

The pathological phenomena which are caused by this condition are the same as those caused by urethral stricture, but there are differences in the circumstances of the case which are apt to be dangerous.

The patients suffering from prostatic hypertrophy are usually elderly men who object very much to surgical interference, stating that they would sooner die than submit to an operation. The alternative procedure of catheterisation means sooner or later an infected bladder and subsequently an infected kidney. Prostatic enlargement may proceed to an extreme degree without complete obstruction occurring.

so that patients reach a serious condition without seeking medical advice; in fact the occurrence of frequency of micturition misleads them into believing that their kidneys are working satisfactorily because "they pass so much water."

Such patients may be subject to uræmic symptoms for many months before any urgency becomes apparent. Headache and shortness of breath may be regarded as signs of age and no steps taken to enquire the true cause.

A period of cold weather by checking perspiration and thus throwing unusual strain upon the kidneys may precipitate an uræmic convulsion which alarms the patient and his friends, or a state of coma may supervene with insidious slowness peculiar to this form of uræmia. Ocular changes are sometimes a means of directing attention to the condition.

Retinitis, retinal hæmorrhage, sudden blindness may occur.

The symptoms of this form of surgical uræmia do not differ in any marked degree from those of the uræmia due to the nephritis which comes under the care of the physician.

It is the intention of the writer to deal with the question of the treatment of urinary obstruction in a paper to be published in a forthcoming number of *The Antiseptic*.

Our Contemporaries.

MEDICINE.

The Storage of Vaccine Lymph.

FROM the experiments and researches of M. Kelsch, recently reported to the Paris Academy of Medicine, it would seem to follow that vaccine preserved in the refrigerators of the city of Paris at a temperature of -10° C. and -15° C. not only retains its physiological action, but even acquires increased activity. On the other hand, similar vaccine kept in the ice-chests of the Academy at a temperature of 10° C. loses its activity. Thus vaccine can be kept indefinitely in a refrigerator, provided that it is examined and tested each year. The author thinks that this activity is due to the fact that the vaccine is preserved pure and without admixture of glycerine.—*The Hospital*.

Meningitis and its Anticipation.

In the slighter cases of fracture of the base of the skull, and some irritation from the laceration of the meninges, it is well always to bear in

mind that these patients are apt to develop meningitis within 48 hours after the injury, and it ought to be anticipated. The way to do it is to clear the bowels out, and, in the second place, to put an ice-bag on the head to ensure quiet, and, further, to insist upon absolute starvation diet. Mistakes are often made in these cases by not looking carefully after the attendants. Nurses, with the best intentions, sometimes force nourishment on such patients, but judicious starvation of a brain case is really one of the most important elements in the treatment. By starvation diet is meant milk and water, and nothing else, for the first 48 hours or so, and then, perhaps, a little bread and butter, and subsequently, very gradually and very slowly, an increase in the diet. The medical man must be guided by the temperature and the general symptoms before he lets the patient take anything really solid in the way of nutriment.—*The Practitioner*.

Mosquito Nets and Health.

AN important point was raised at the recent British Medical Association meeting by Dr. G. D. Whyte, who has been analysing the air inside and outside the mosquito curtain as used for protection of sleepers in malarial districts. He finds that the percentage of carbon dioxide is practically the same under the net as in the atmosphere of the room outside it. This holds good whether doors and windows are open or shut. In this respect the net is absolved of any evil influence. It is otherwise when the organic content of the air is analysed, for this is twice as great inside the curtains as outside them. He regards the use of the net as detrimental to health for this reason; and for the tuberculous the disadvantage is so great that he prefers to rely on citronella or other insecticide for warding off the malaria-carriers. He recognises fully the enormous gain of using nets for preventing insect-borne diseases, but points out that there is a corresponding disadvantage in the accumulation of organic matter which is thus encouraged. It is probably this organic matter which renders the mosquito-curtain so excessively irksome on hot and airless nights in the tropics, when the temptation is so great to throw it aside and risk a few bites for the sake of getting off to sleep. It might be worth Dr. Whyte's while to experiment with oxygen or some oxygen carrier, with a view to mitigating the evil which his researches have indicated.—*The Hospital*.

Nitro-Glycerine Hypodermically in Epilepsy.

After the attack has been established and when the sufferer lies where he has fallen, with rigid limbs and unconscious of all surroundings, a hypodermic injection of 1-100 grain of nitro-glycerine is given, and before

the needle can be withdrawn total relaxation may take place. The use of the drug is followed by a prompt return of consciousness. Sometimes a second dose is required. The after-effects of the attack are markedly lessened, the patients recover without fatigue and general demoralisation, and the sudden transition from an object of terror to a rational being is remarkable. It is not claimed for the method that it is curative. It shortens the attack, saves fatigue, and has some influence upon the frequency of attacks. The after-treatment consists of the bromides in a bitter infusion, and the use of minute doses of nitro-glycerine.—*The Practitioner*.

Liver Pus Coughed up Through the Right and Through the Left Lung.

JAMES CANTLIE, M. B., F. R. C. S. —The spontaneous evacuation of pus through the right lung is an event too common, indicating either failure to diagnose pus in the liver or hesitation to operate if the presence of pus is suspected. The failure to recognise pus in the liver with certainty will continue, even amongst the most experienced clinicians, until some more exact method of diagnosis is forthcoming. No single sign or symptom is diagnostic of pus deep in the liver; and, more serious still, there is no group of signs or symptoms which can produce more than suspicion.

Hepatic trouble, especially when inflammatory or painful, shows itself early in the base of the right lung. This is not due to extension of inflammation to the lung, but to mechanical stasis at its base. During ordinary breathing the liver rises and falls with the ascent and descent of the diaphragm; if the liver is inflamed these movements cause pain, and to avoid this the right side of the diaphragm acts less strongly or may become practically still. Expansion and contraction of the lower part of the right lung are reduced to a minimum, and the blood tends to stagnate. Congestion of the right lung is a common feature of the practice in the Tropics, and the practitioner will do well to examine the liver in a patient with this condition of lung. If the condition of the liver is successfully treated the pulmonary congestion will disappear. But if the hepatic inflammation continues, adhesions, first between the liver and the under surface of the diaphragm, may result, followed by a like condition between the upper surface of the diaphragm and the base of the right lung. Along this channel the pus from the liver may travel upwards and invade the lung. It then reaches a large bronchus in the lower and inner aspect of the lung. The lung at this point becomes adherent to the pericardium and the pus travels upwards so close to the pericardium that to reach it is difficult. In

one of the writer's cases the track of the pus was so close to the pericardium that a depth of 7 in. from the right side of the chest had to be traversed before it was reached. To reach it the skin had to be incised and portions of two ribs removed to allow of the longest needle available reaching the pus. The channel was recognised only by the toughness of its walls, but as it was by measurement proved to be lying against the pericardium and midway along the antero-posterior diameter of the chest, considerable anxiety as to thrusting a needle, and later a trocar and cannula, into the pus track was inevitable.

The skiagraphs show the contrast between the level of the diaphragm when pus travels upwards through the right lung to its exit, and when, much more rarely, it is evacuated by way of the left lung. In both cases the patients came under the writer's care after the pus had burst upwards through the lung and was being coughed up. They had the usual intervals of being apparently cured (in some as long as 2 or 3 months). The cough ceased, the temperature remained at normal, and to all appearances they had recovered. But recurrence took place, and an operation became imperative. The pus in the case of the right lung was reached at a depth of 6 in. from the surface.

When the pus travels upwards through the left lung the difficulties of finding pus are seriously increased owing to the anatomical relations. In this case one had to beware of penetrating the pericardium, or even the heart, for adhesions had pulled the heart well over towards the left. The position of the aorta, and even of the œsophagus, had to be thought of, and it was with hesitation and anxiety that one allowed the needle to penetrate, even to the depth of 3½ in. from the front, the axillary or the posterior aspects of the left chest wall. Repeated attempts to reach the pus failed, and the question of radical cure had to be considered. To attempt to reach the pus by way of the abdomen would be dangerous, for the pus finding exit through the lung swarms with bacteria from the respiratory passages. To open the abscess from the abdomen along an unbarriered tract is therefore almost certain to be followed by septic peritonitis. The pus should be reached from the chest.

The method the writer finds the safer is to open the abdomen, search for the adhesion area between the liver and diaphragm, and, having located it, thrust the needle of an aspirating syringe through the left side of the chest-wall, directing its point towards the adhesion in question until the pus is reached. When the pus is found in the syringe, a large trocar and cannula is made to travel by the same route as the needle until the cavity is reached, when the trocar is withdrawn,

and an india-rubber tube (stretched in a long metal rod) is passed along the cannula into the abscess cavity, the cannula removed and syphonage applied, as practised by the writer in ordinary cases of liver abscess. The abdominal wound is now closed, the syphonage kept up until all expectoration of pus ceases, and until no more pus drains away through the tube. The large tube is removed, a smaller tube inserted and shortened from day to day until the tract heals.—*The Medical Review*.

The Isolation Wards.

BY

L. ROGERS, M. D., F. R. C. P., I. M. S.

Cholera.

Hypertonic Transfusion in Cholera.—In the Report of the Medical College Hospital of last year, I gave the results of the first year's trial of hypertonic intravenous transfusions of salt solutions in cholera, and recorded the gratifying fact that the mortality had been reduced by this measure from 61.2 per cent. to 33.5 per cent. in the 176 cases treated by the method during 1908. During 1909 this treatment has been continued with a precisely similar result. Thus the mortality for the whole year has been 33.6 per cent. among 128 cases. A method of running the fluid into a vein at any desired rate by means of a stopcock canula and a graduated bulb has been devised. It is now clearly demonstrated that by the use of hypertonic saline transfusions the mortality of cholera can be reduced by nearly one half. Still one-third of the total admissions end fatally, as this measure only serves to replace the lost fluid and to assist in the elimination of the toxins through the kidneys, but does not directly attack the source of the poisoning or the cause of the disease. It thus fails in the most severe cases, as, although the circulation can be maintained for a long time, yet eventually an overwhelming amount of toxin is absorbed from the bowel with a fatal result. Nevertheless, much time is afforded for the use of other measures directed against the actual cause of the disease, if effective means can be discovered of influencing its course, and in this direction some progress has recently been made. Before passing on to this I may record that the fluid I now recommend for transfusion in cholera has the following composition:—

Sodium chloride	..	..	120 grs.
Potassium chloride	..	..	6 grs.
Calcium chloride	..	..	4 grs.
Aqua ad.	..	..	1 pint.

The sodium chloride is made up of the strength of two drachms to the pint, and at the time of transfusion I add to each pint one drachm of a strong solution of the potassium and calcium chloride containing the abovementioned amounts of these salts. The advantage of this composition is that the salts are in the same proportion as Ringer's fluid, by means of perfusion with which an animal's heart can be kept beating for a very much longer time than with sodium chloride alone. Messrs. Burroughs and Wellcome are now making "solloids" of this formula at my request. Four of them added to one pint of water (which is previously or subsequently sterilized by boiling for at least ten minutes) gives the above strength, while if three only are dissolved a suitable strength for subsequent transfusions in the same patient is obtained. Two of them would make a normal salt solution.

Destruction of the Cholera Toxins in the Bowel as a Directly Curative measure in Cholera.—The occurrence in the late hot weather and early rainy season of 1909 at both the Medical College and the European General Hospital of a series of the extremely fatal, though fortunately rare, hyperpyrexial form of cholera, emphasized the futility of even hypertonic transfusions in the most virulent types of this disease, and led me to direct my attention to trying to find some more directly curative treatment to be combined with the intravenous injections. Much work has been done both at the Pasteur Institute in Paris and in German laboratories to make a curative serum for cholera, but without any very striking success. Various antiseptics have been recommended in cholera with a view to destroying the comma bacilli in the intestine, and doubtless some of them deserve further trial in combination with hypertonic transfusions. Apart, however, from the question whether they can be safely used in sufficient strength to accomplish the desired purpose, it is open to question whether the destruction of the comma bacilli within the bowel is altogether advisable. The toxins of this bacilli are mainly of the intracellular classes, and these are liable to be dissolved out of the dead bodies of the bacilli by the alkaline juices of the small intestine, and may then be absorbed in a fatal dose. The failure of any antiseptic drug to become established in the treatment of cholera in spite of long trial is not encouraging to their further use.

On the other hand, the fact that the comma bacilli only gain access in a very slight degree to the tissues of the patient, indicates that the toxins of the disease are formed almost, if not solely, within the bowel and are absorbed through its wall or damaged mucous membrane. Now the toxins produced by the most virulent pathogenic bacteria are largely

of the nature of albumoses and nucleoproteids. These are unstable albuminous substances, which are very readily destroyed by any actively oxidising agent just as any kind of snake venom is rendered inert by a small amount of permanganate of potash, as I showed some years ago. It, therefore, occurred to me to try the internal administration of this drug, both as a weak solution to drink and in the form of pills designed to dissolve in the small intestine. Up to the end of the year only 16 cases had been so treated, among which only one patient died, in spite of eleven of them being sufficiently severe to require intravenous transfusion: an unprecedented series of recoveries in my experience. The rapidity of the improvement of a number of severe cases was also noteworthy. This line of treatment is being pursued during the current year, so far with greater success than in former years with the hypertonic transfusions alone, and as I have no reason for thinking that it ever does harm, I may mention here the manner in which the drug is being administered at the time of writing. As the permanganate of potash is very astringent to the taste I now use for drinking a solution of 2 grains to the pint of calcium permanganate, which is somewhat less unpleasant to the taste, and even a stronger one might be safely administered. The potassium salt I seldom got patients to swallow in any quantity of a strength over 1 grain to the pint. In addition the latter salt is given in pills, as unfortunately the calcium one is too deliquescent to be easily used made up in solid form. After trials of various prescriptions I have found the following the most satisfactory:—

Permanganate of potash grain 1.

Kaolin and soft paraffine (vaseline) . . quantum sufficit.

Make as small a pill as convenient and coat it with salol varnish (salol one part and sandarach varnish five parts) in order to prevent its being dissolved in the stomach. These pills are so small that they are rarely vomited and readily passed into the small intestine. The quantity of the pills which it is advisable to give I do not yet know, but I have commonly administered one every quarter of an hour for from three to five hours, and on the following day repeated about half that number or more if the rice water stools continue and believe that even larger amounts might be used with advantage in severe cases. It is not uncommon for typical copious rice water stools to change to small green ones within less than 24 hours, although in early cases I have rarely seen this favourable sign in under two or three days before using oxidising agents. Much further experience is necessary before the advantages of this line of treatment can be definitely proved, but the

results so far, I think, justify me in recommending its trial in cholera although in severe collapse it must of course be combined with hypertonic saline injections.—*The I. M. G.*

Some Points in the Treatment of Enteric Fever.

BY

A. KNYVETT GORDON, M. B. (Cantab.)

Formerly Medical Superintendent of Monsall Hospital and Lecturer on Infectious Diseases in the University of Manchester.

It has often occurred to me that if one takes the subject of enteric fever as it is treated in most of the modern text-books of medicine, one finds it handled as if no very great change in our knowledge of the pathology of that disease or in our methods of dealing with it at the bedside had taken place in the last few years; in some works, in fact, the article might have been written twenty years ago.

As a matter of fact, however, such change has occurred, and certain discoveries in the field of clinical pathology have been reflected in the practice of those physicians who have had to deal with the disease in bulk, so to speak, with the result not only of considerably reducing the hospital mortality of the disease, but of—even more markedly—alleviating the sufferings of those afflicted with it. I purpose, therefore, mentioning some points which have struck me as essential in the treatment of Enterica, mainly from the point of view of the hospital resident, though, as will be seen, there is no great difficulty in adapting most of them to the exigencies of private practice.

CHANGED VIEWS.

Let us first see how our conception of the pathology of the disease has changed. Formerly we regarded the patient as one who was suffering essentially from ulceration of a more or less considerable portion of his intestine, which resulted primarily in diarrhoea, and sometimes was responsible also for intestinal distension, and often for perforation of the bowel, with its necessarily fatal termination. Certain toxins were formed at the site of the ulcers which, when absorbed into the circulation, gave rise to the general symptoms of pyrexia and prostration, and as a necessary consequence of their action on the cardiac muscle the patient suffered a prolonged and debilitating convalescence, which often rendered him incapable of performing his ordinary work for many months. Clinically, this view of the disease meant necessarily that the patient was fed on an entirely fluid diet consisting often of milk alone not only during the pyrexial period, but usually for a fortnight or more after the

temperature had fallen; every slight rise of temperature after solid or soft food had been commenced was regarded as an indication that the physician had been too venturesome and that a return to the fluid dietary was indicated.

Now-a-days, however, we do not regard the ulceration quite as the prime factor in the disease; we know that in the first week of the illness the *B. Typhosus* is found in the circulating blood in almost every case when a careful technique is employed, and that as the illness progresses the organisms leave the blood and are discharged, *via* the bile, into the duodenum, so that actually more bacilli are present in the commencement of the small intestine than at the site of the ulcers themselves; indeed, it is not unlikely that the ulceration is quite a secondary process and is due to irritation of the intestinal lymphatic patches by the bacilli which have entered from above. We know also that in fatal cases the degree of toxæmia observed at the bedside is not proportional to the extent of ulceration found post-mortem.

THE MODERN IDEA.

This work of the pathologist was, however, preceded by a change in the method of treating enteric fever which has been practised for many years now in hospitals, though it does not appear to have found its way into private practice any more than into the text-books. It consists essentially in recognising that diarrhoea is not, in the average case, a necessary symptom of enteric fever, but that it can readily be produced by the administration of milk (or perhaps any other food) after the patient has shown his inability to digest it. In practice the diarrhoea almost always ceases when the milk is stopped, and the milk curds, which are an essential feature of the "typical typhoid stool," disappear from the fæces. Moreover, the converse to this also holds good, namely, that the "typhoid stool" is often seen in other diseases (notably in cases of septic scarlet fever) when milk is inadvertently given to excess. The result of this change in the dietary of the enteric patients was not only a great reduction in the immediate mortality (which persisted irrespective of the varying severity of different epidemics), but also in an even more marked diminution in the incidence of those complications—namely, perforation of the intestine and relapse of the disease, which had been previously held to be due to premature resumption of solid food.

The modern practice in this respect may be summed up in the maxim to feed the patient irrespective of his temperature chart on such food as he can digest, the idea being to enable him to combat the

toxæmia, which is the essential feature of the complaint, by providing him with as much nutriment as we safely can.

HOW IT WORKS.

How does this work out in practice? In the great majority of cases admitted to the fever hospitals the patient has diarrhœa and is passing milk-curds in the stools, so as a rule he is given nothing but water for twenty-four or even forty-eight hours; if he is very weak, a little egg albumen and possibly glucose is added to the water. When the diarrhœa has ceased, as it usually does, albumen water, glucose, and perhaps baked custard and jelly, are administered.

Meantime attention is paid to the toilette of the mouth, for in a large number of cases the dry tongue is a sign of oral sepsis rather than of enteric fever; carious teeth are extracted under local anæsthesia.

In the majority of cases—again irrespective of the temperature chart—the patient is now hungry and has no distension of the abdomen and his tongue is moist. So the diet is gradually extended by the inclusion of bread and milk, bread and butter, pounded fish beaten up, or poached eggs, and ultimately pounded chicken, the essential point being to vary the menu from day to day and to give the patient such a quantity of food as to leave him slightly hungry after each meal. Tea and coffee are given freely and are generally much appreciated by the patient. Shortly, the indications for the use of solid—though carefully pounded—food are hunger, a moist tongue, and absence of diarrhœa and abdominal distension; but there remain of course, some cases—generally those whom the physician does not see, or perhaps does not correctly diagnose, at a sufficiently early period of the illness—where diarrhœa is profuse and intractable and is accompanied by meteorism.

Here one must give fluid food only, and albumen-water is usually our sheet-anchor, though some preparation of concentrated milk proteid may often be safely and advantageously added; milk itself almost always aggravates the trouble, and beef-tea or meat extracts are quite inadmissible. Drugs, however, are sometimes useful, and I have found enemata containing turpentine very helpful sometimes, and also medical Izal oil given internally in the form of an emulsion in mucilage of tragacanth in doses of three minims of the pure oil (to two ounces of the emulsion) every two hours by the mouth. Personally I do not like opium in these cases; it almost always increases the distension, and thus tends to favour the occurrence of perforation of the intestine while it completely masks the signs of this catastrophe when it arises. A long, soft tube carefully introduced into the rectum, and allowed to remain there for an hour, is often useful.

SOME POINTS IN TREATMENT.

The use of Izal oil perhaps demands a word of explanation; it is not given with any idea of disinfecting the ulcers; in the light of modern pathology it probably would not serve any very useful purpose if we could do this, and we fairly obviously cannot, for an antiseptic, if soluble, would be absorbed before it could reach the ulcerated surface, and if insoluble is in practice passed unchanged per rectum; but the Izal emulsion is probably absorbed in or near the duodenum, and may perhaps check the formation of toxins which irritate the intestine lower down. Whatever theory, however, be held as to its *modus operandi*, I have no doubt from a fairly extensive trial that it checks diarrhœa.

It is also a powerful diuretic and diaphoretic, and this brings me to the next point—namely, whether we can assist in the elimination of toxins through the skin and kidneys. The first suggestion for this purpose was the routine use of the cool bath, and there can be no doubt that when the external temperature is high, as in Australia and America, whence come the most markedly favourable reports of its use, it may be employed almost as a routine measure. But otherwise, that is to say during the greater part of the year in this country, I believe that cold bathing is best reserved for the sthenic type of case. In robust adults, with full pulses and much delirium (of the violent, as distinguished from the low muttering type), it often acts like a charm; but I have seen some untoward results from its use in feeble patients and in those suffering from diarrhœa. As an antipyretic, cold bathing or sponging is sometimes efficacious, but it is seldom necessary or advisable to treat the pyrexia *per se*—one should prescribe for the patient and not for his temperature chart. It would seem that the enthusiasm for routine cold bathing has rather abated of late years.

A much more efficient measure, in my experience, lies in the administration of large quantities of water, or flavoured barley water, by mouth, and a skilful nurse will often get her patient to drink from five to six pints of fluid in the twenty-four hours, this form of treatment being most efficacious when combined with diuretics such as “imperial drink” or the aforesaid Izal emulsion.

In the treatment of the ordinary case we have, then, three indications to fulfil—namely, to keep up the patient's strength by the administration of adequate nourishment in order that his leucocytes may be in a condition to afford an efficient defence against the attacks of the bacillus or its toxins, to keep the intestine as still as possible by the avoidance of anything tending to cause diarrhœa, and to assist, as far as we are able, in the elimination of toxins through the skin and kidneys.

COMPLICATIONS.

A few words may now be said about the treatment of certain complications of the disease, and we will take first the occurrence of heart failure. This may be either sudden or gradual, and in the former case is almost invariably accompanied by extreme dilatation of the left ventricle, which can be detected by light percussion: it is particularly liable to occur in the course of attacks which are characterised by nervous prostration rather than by much pyrexia, the type of disease, in fact, which we often meet with either in thin, worried-looking men or in over-worked women. In many cases the administration of stimulants by the mouth is useless as they are not absorbed sufficiently quickly, and hypodermic injections are but little, if at all, more efficacious, as the capillary circulation is in a state of stasis. Very many patients, in fact die immediately, but I have seen not a few saved by the timely application by the nurse of a towel or bath sponge wrung out of very hot water to the præcordia, and it is as well that instructions to this effect should be left with the attendants. Inasmuch as the condition is invariably accompanied by extreme pallor of the face, its occurrence can be detected by a careful nurse, or even by the patient's relatives. When the emergency has been treated a relapse must be guarded against by the hypodermic administration of strychnine at regular intervals.—

FAILING HEART AND HÆMORRHAGE.

The treatment of the gradually failing heart is more difficult, as in many cases it is undoubtedly due to a specific action of the typhoid toxin on the cardiac muscle, and in consequence stimulants are not of much avail, and I am convinced that the administration of digitalis—apart from pre-existing valvular disease—is not only erroneous but dangerous, and there is, moreover, considerable risk of the dose of the drug being increased under the belief that it is not acting sufficiently while the patient is in reality suffering from digitalis poisoning.

It is necessary here to mention the use of alcohol in enteric fever. My own view is that, in large doses, given for rapidly occurring heart-failure, and discontinued as soon as the emergency is past, brandy is very useful indeed, but that the common practice of administering two or three ounces of spirit daily for two or three weeks is most harmful. I have never satisfied myself that such doses were of any value to the circulation, and I am sure that they often produce or aggravate diarrhoea. Probably, strychnine is the most valuable drug we possess as far as the heart is concerned, and, if given hypodermically, does not seem to increase intestinal peristalsis.

The treatment of hæmorrhage from the intestine not only resolves itself into the administration of opium very freely, but it is also necessary to avoid the use of any hæmostatic which has the effect of raising the general blood-pressure. What then happens is that the action on the vaso-motor system outweighs the local effect on the injured vessel, and in practice such drugs as adrenalin, ergot, gallic acid, and the like almost always increase the hæmorrhage.

Just as it is necessary to use opium in hæmorrhage, so it is essential to avoid it in anything that may possibly turn out to be perforation of the intestine. The key to the successful treatment of the latter complication is that the surgeon shall have the opportunity of opening the abdomen in the preperitonitic stage, and this is impossible if opium be given. Moderately severe abdominal pain in enteric fever is far more often due to perforation than is usually supposed, and the result of the advice given in most of the text-books to give opium for abdominal pain is accountable for the descriptions in the same volumes of the symptoms of perforation, which are in reality those of the subsequent purulent peritoneal effusion. If the patient has an attack of colic, it can usually be relieved by the application of a hot fomentation, and, indeed, often by a cup of hot tea. In practice patients do not always, or, as I believe, usually suffer from severe collapse when perforation occurs. It is not necessary to consider seriously the view that any other procedure except prompt laparotomy can be of any avail in the treatment of this distressing occurrence.—*The Hospital*.

Treatment of Typhoid Fever in Children.

Marini observes that among the methods used for attacking typhoid fever in children, "frigotherapy" renders excellent service and constitutes the best plan of lessening the high temperature. It is simple and easy of application, causes no pain and involves no risk. The ice-bag is applied to the abdomen from the beginning of the illness. To avoid scars, a thick flannel is placed underneath, and only in serious cases is the ice applied directly to the abdomen. The application of the ice-bag is renewed every four hours, and it must be kept regularly in place until recovery. It must not be displaced by the child's movements, and to this end it should be fixed by a bandage (but not too tight). To this treatment there do not apply the same contra-indications as to the cold bath, which often gives rise to painful reactions. The ice-bag prevents the peritonitis which is wont to develop early in these cases, and it causes a manifest lessening of visceral congestion. It also has a real cardio-tonic effect, and wards off thus some of the frequent complications of the

typhoid infection. The continuous application of the ice is stopped only when the temperature has definitely fallen and the pulse is normal. Intestinal antiseptics and alimentary hygiene must not be omitted.—*The Canadian Practitioner & Review*.

SURGERY.

Septic Phlebitis of the Spermatic Cord.

W., age 30, pure European, formerly a soldier, came much debilitated by fever into hospital, with a history of having four days ago a sharp attack of "ague" which was followed in a few hours by swelling of the right side of the scrotum. The fever was continuous and caused much prostration. The scrotum increased in size, with a cord-like swelling in the inguinal ring continuous with the testes.

On admission, the scrotum was found much swollen, the surface being red, œdematous, and painful acute hydrocele. The spermatic cord was swollen to the size of the ball of the thumb, painful and tender, the swelling extending from the testes up to the canal, and ending obscurely at the brim of the pelvis on deep palpation. The patient kept his thigh somewhat flexed, and rotated out, and had the facies of one clearly in a gravely septic condition. Operation was performed by Major Bird four days from the initial rigor; a long incision was made from the bottom of the scrotum extending up the groin till opposite the anterior and superior iliac spine; tunica was found full of turbid, yellow fluid, its reddened surface being covered with a yellow lymph deposit. The testes were found moderately swollen. The cord was very much swollen, of 1 inch diameter, its veins being dilated and thrombosed. The increase in size was mainly due to yellow jelly-like infiltration of the cellular tissue of the cord. On section, the surface was yellow, with the plugged ends of the out veins protruding. The muscles of the abdomen were freely divided, and the cord ligatured as high as possible. Streptococci were found in the yellow exudate. With the removal of the cause of sepsis, the patient made a good recovery.

This case is one of a rare condition which has not been described. It simulates strangulated omental hernia in appearance, but has none of its intestinal symptoms. If not operated on early, i.e., by the fourth day at the latest, it is invariably fatal.—*The I. M. Gazette*

Filarial Worm Encysted in a Lymphangiectasis.

A. E. V., aged 33, Eurasian clerk, always an inhabitant of Calcutta, was admitted into hospital under Major Bird for the treatment of double inguinal hernia. On further examination the case was found to be lym-

phangiectasis of the cord. The swellings could be reduced and were projected downwards on coughing with a clear impulse which has the additional character of a thrill. The tumours were felt to be knotted, vermiform masses, not like the smooth surface of a hernial sac.

On exposing the right tumour, a small clear pellucid cyst $\frac{3}{4}$ " diameter, the walls being a transparent pellicle, was found. In it was a living worm rolling and twisting itself into knots. The cyst was removed entire, and placed in formal. It was taken to the Bombay Medical Congress where it was identified as a female *F. Bancroftii*. The case healed by first intention.—*The I. M. Gazette*.

Kava and its Effects in Gonorrhœa.

The oily substance "cavaine," isolated from the *Piper methysticum*, or kava, has the power to subdue pain at the ends of the peripheral nerves. It also exerts an influence, perhaps not so great, over the development of micro-organisms. Taken internally one or two-drop doses, it causes warmth and a sense of appetite, and imparts to the breath a penetrating odor of pepper—an odor which may even be detected in the urine. It is a gentle diuretic, and acts directly upon the ends of the nerves of the urethral mucous membrane, causing a soothing or partially anæsthetic effect, in virtue of which the use of injections is facilitated. From the presence of cavaine in the urine also depends the healing quality of the latter, and the absence of decomposition, so that nothing is afforded that can favor the growth of gonococci. The use of cavaine has come to be restricted almost entirely to the treatment of gonorrhœa and acute cystitis. Neisser is inclined to give it the first place among the internal remedies for the former affection, though he doubts its being sufficient to destroy the gonococcus. Doubtless, as a destroyer of active cultures, cavaine is not equal to many but as an antiseptic, as a means of interfering with the growth of germs, and as a means strong enough but not so strong as to be dangerous, it is considered adequate. According to Pohl, certain plants remarkable for their odor and bitter properties possess the power of increasing the number of leucocytes in the circulating blood. Kava, as one of the *Piperaceæ*, falls under this denomination. The dose of cavaine is 0.02 gram ($\frac{3}{100}$ grain), four or five times a day. Two doses may be taken with profit at the noonday and evening meals. The author presents brief histories of four illustrative cases in which the use of cavaine capsules in conjunction with injections of $\frac{1}{4}$ to $\frac{1}{2}$ per cent. protargol gave good results. The most prominent effects were sedative and antiseptic.

THE ANTISEPTIC.

The digestive functions were not deranged by the remedy.—*The Monthly Cyolopædia & Medical Bulletin*

Tetanus Treated with Subcutaneous Injections of Magnesium Sulphate.

So long as toxin is being formed at the seat of infection, injections of this salt do not prevent its absorption by the nervous system. It only acts by controlling the spasms through its paralyzing effect on nervous tissue, and by conserving the patient's strength, gives him time to form his own antitoxin. The author believes that, if both an emulsion of rabbit's brain and magnesium sulphate were injected at the same time, the patient would have a better chance of recovery, as the brain emulsion would prevent or diminish absorption of the toxin by the nervous system, while the magnesium salt would diminish the spasms produced by the toxin already fixed in the nerve-cells.

A case of tetanus is reported in which the use of magnesium sulphate was followed by recovery. The patient, a coal-miner, 21 years of age, was admitted to the hospital three weeks after receiving a small scalp-wound from a kick. The symptoms had commenced six days before with pain and stiffness in the abdominal wall and back. On the morning of admission a convulsion had taken place, and general rigidity soon appeared, together with pain, hindered breathing, cyanosis, and occasional loss of consciousness. The following day he received a subcutaneous injection of 10 cubic centimeters of a 10 per cent. sterilized solution of magnesium sulphate, 5 cubic centimeters being introduced into each thigh. Soon after, he obtained an hour's sleep, the first in forty-eight hours. The injections were repeated every four hours, night and day, for two days, and though painful in themselves, gave immense relief. At the end of this time the comparatively slight and more frequent spasms had almost entirely disappeared, and the severe spasms been reduced to one in every five to twelve hours. The dose of the solution was then rapidly increased to 20 cubic centimeters, injected as before in two separate parts of the body, and this was continued every four hours for four days. There were now but one, or at most two, spasms in the twenty-four hours, and the rigidity of the legs was passing off. The injections were then stopped. On the following day an erythematous rash appeared over the shoulders and gradually spread until the greater part of the body was covered; it disappeared in a week. The last severe spasm was recorded three days after the injections had been stopped, and rigidity gradually disappeared. The patient left the hospital five weeks after admission. Throughout his illness he could

swallow without difficulty, and as his thirst was great, especially during and for a few days after the administration of the injections, he was able to take a large quantity of nourishment. On a daily average he took 8 to 10 pints of fluid, consisting of strained soup, milk, water, and an occasional beat egg. The objection to the magnesium sulphate treatment is the pain produced by the injections, but this could probably be largely overcome by using larger quantities of a weaker solution.—*The Monthly Cyolopædia & Medical Bulletin*.

Early Tertiary Syphilis without Secondary Eruption.

P. Minassian:—*Case 1*.—A youth, aged 19, contracted a gangrenous chancre of the balano preputial mucous membrane. There was slight glandular enlargement but no roseola or other secondary eruption appeared, although he was under observation for 5 months. Then two gummata appeared on the scalp and one of the soft plate. The last was very destructive. In the two other ones the spirochæta pallida was demonstrated. There was fever ranging from 101.3° to 103.1°. Deep scars followed.

Case 2.—A youth, aged 20, had a gangrenous chancre of the glans but little enlargement of the inguinal glands. Although attentively looked for, no secondary eruption appeared. After six months a pustulous and gummatous syphiloderma appeared all over the body which yielded to specific combined treatment in about one month.—*The Medical Review*.

Cast of Male Urethra.

DR. A. L. WOLBARST reported to the Eastern Medical Society of America the case of a man, aged twenty-four, who, in 1908, after accidental cauterisation with strong silver solution, passed a cast of his entire urethra. Being under treatment for anterior urethritis, as the result of the transposition of two bottles, the anterior urethra was injected with 10 per cent. silver nitrate. On the mistake being discovered, the bladder was thoroughly irrigated with warm salt solution, and the patient then given some of it to use at home. There was no evidence of trouble for four days, but on the fifth the urine was cloudy, and there were signs of inflammation. There was no pain of any kind. Treatment was then instituted, which consisted in copiously irrigating the entire urethra twice daily with salt solution. Pain commenced to be present at the neck of the bladder, the temperature rose slightly, and the urine commenced to show signs of blood at the end of micturition. Broken-down leucocytes were found in the urine, but no micro-organisms. After a time there was more or less constant tenesmus and

urinary urgency, for which the patient was admitted to hospital. His temperature on admission was 102.3, pulse 88, respiration 24, specific gravity of urine 1.020, no albumin, and the epithelial and pus cells were negative as to gonococci. The thighs and scrotum showed superficial burns from the caustic. There was no polyuria, but the patient had vomited the night before admission. The glans penis and inner surface of the prepuce were red. A slight muco-purulent discharge oozed from the urethra. No gonococci were found in this discharge. The patient was treated by rest in bed, urotropine by the mouth, and urethral irrigations with warm boric lotion. During the next week he improved gradually, and except for the purulent discharge was normal. Three weeks after the initial accidental caustic injection, a dark tenacious mass appeared at the meatus externus, which was removed, without pain, with dressing forceps. Three days later a second mass came away. With the object of preventing the raw urethral surfaces coming together, medicated bougies were used for the next five weeks, after which a second was passed. At first only a French 21 would pass, but gradual dilatation ended in the passing of a 28. At a later date two contractions of the urethra occurred which necessitated treatment by passing bougies once a month. The urine is now quite clear, and the gonorrhoea cured. Examination of the cast showed necrotic tissue, with areas suggestive of capillaries. In spite of the extensive destruction of tissue, new mucous membrane would seem to have been formed.

—*The Hospital.*

Chloroform Anæsthesia.

The Special Chloroform Committee appointed by the British Medical Association in 1901 has presented its final report, which appears in the supplement to the *British Medical Journal* of July 9th, 1910. The committee were appointed "to investigate methods of quantitatively determining the presence of chloroform in the air and in the living body"; and subsequently to "determine if possible what is the minimum dose of the drug (chloroform) which would secure an adequate anæsthesia for operations and at the same time not endanger life."

On reading this report, one cannot help thinking that it is more by good fortune than good management that so few deaths have occurred as the result of chloroform anæsthesia. It is shown that chloroform enhances the inhibitory mechanism of the vagus, and the danger to life from this cause becomes further intensified from the diminution of the spontaneous excitability of the heart muscle itself, consequent upon the action of the chloroform. The inhibitory action of the vagus becomes

marked when air containing more than 2 per cent. of chloroform is administered, and becomes rapidly intensified when higher percentages of chloroform are administered. As the committee show that it is practically impossible, except by the use of a special inhaler, to determine the percentage of chloroform which is being administered, and that by the ordinary open drop method the percentage of chloroform in the inspired air may be very high, it is clear that grave risks must be run, unless during the induction period, the drug be administered in very small doses.

Another most important point referred to, which has been determined by EMBLEY, of Melbourne, and C. J. MARTIN, is a very practical one. It is pointed out that not even the most assiduous attention paid to the respiration will prevent the occurrence of death, if the vapour strength of 2 per cent. of chloroform is maintained for long periods. "It is quite true that respiration being secondarily affected, interference with its rhythm or depth can be seen, and may warn of imminent danger. The warning thus conveyed will, however, in many, or even in most, cases, come too late if a high percentage of chloroform is allowed to persist in the inhaled air." The associated fall of blood pressure is also an important practical point to note. This may decline quite gradually, and at a certain point in this fall the nerve centres will cease to receive sufficient oxygenated blood to enable them to carry on their function, and respiratory failure will occur. The fall of blood pressure is directly proportional to the strength of the chloroform vapour inhaled, and as respiration can only continue so long as the blood pressure is maintained above a certain level, it is clear that the maintenance of life under a prolonged chloroform anæsthesia must depend upon a restriction of the percentage of chloroform in the vapour inhaled. After-effects—gastric, renal, or pulmonary—frequently arise as a result of the prolonged administration of a too concentrated chloroform vapour, and tissue destruction may extend to the condition found in cases of acid intoxication.

The committee therefore conclude, as a result of their investigations, that a 2 per cent. vapour is sufficient to induce full surgical anæsthesia, but that in certain grave pathological conditions, the safety dose is below 2 per cent; that the dosage for the maintenance of anæsthesia is of as much importance as that of the induction period, and the neglect of recognising this has caused many deaths, and constantly delays convalescence; and that while no definite limit of safety can be fixed for this dose, it is in most cases 1 per cent. at first, and must be lowered as time goes on.

The committee investigated many kinds of inhalers, but ultimately used that of VERNON HARCOURT, which is fully described in this report, and which appears to be most satisfactory in enabling the anæsthetist to know exactly what percentage of chloroform vapour is being administered to the patient. But while the accurate dosage of the anæsthetic drug is thus shown to be a matter of the utmost importance in avoiding "preventible" deaths from chloroform anæsthesia, the use of the most perfect instrument will not be successful unless the anæsthetist possesses knowledge and adequate skill; nor can it prevent death under chloroform anæsthesia from other causes incidental to the pathological state of the patient, or to the operation which is being performed; nor can it prevent the occurrence of sudden deaths which appear to be due to excessive nervousness and fear, and which occasionally occur even when a very minute dose of anæsthetic has been used.

The report is one which should be carefully studied by all practitioners, and specially by those who give much attention to anæsthetic work.—*The Australasian Medical Gazette.*

THERAPEUTICS.

The Prevention and Treatment of Infantile Convulsions by Cold Baths.

M. G. PEARSON, M.B., F.R.C.S.

The books give a dozen or more causes of infantile convulsions, ranging from teething and worms to epilepsy and astigmatism. The list might be indefinitely extended, for there are few infantile complaints that are not occasionally accompanied by convulsions. But these cannot properly be described as causes, and for practical purposes the list is too extensive to be useful. It should be narrowed down to the immediate causes. In all his cases of infantile convulsions the writer has found temperatures varying from 102° to 107° , and in many cases (when opportunity allowed the temperature to be taken) these temperatures were present at the onset of the convulsions. This shows that the convulsions are not the cause of the pyrexia, but that either the pyrexia is the cause of the convulsions or both arise from a common cause. That the former is true is shown by the fact that convulsions could be prevented by reducing the high temperature by cold baths before their onset, or cut short by reducing it after their onset. For long the writer has been in the habit of telling the parents of acutely ill infants that there is little fear of convulsions as long as the temperature is under 102° ;

that above 103° , no matter what the illness, there is a considerable danger of convulsions; and that the temperature should be watched and, if necessary, reduced by bathing. He compares convulsions to the boiling over of a kettle, which is preventible by similar means. The following are examples:—

A boy, aged 4 years, had a deep abscess of the neck. When seen he was unconscious, rigid, twitching, and almost pulseless, with a rectal temperature of 107° . He appeared to be on the point of death. The writer immediately placed him in a cold bath containing ice. After 7 minutes the rectal temperature had risen to 108° . It then fell rapidly; in 12 minutes it was 106° , the limbs were relaxed, and he began to look around. He was taken from the bath and placed on the bed naked, with a wall of canisters full of ice around him for over an hour. A quarter of an hour after the beginning of the bath he was perfectly conscious. Two hours later an incision was made, but pus could not be found. In the evening the temperature rose to 105° , the hands and arms began to twitch, and his father at once put him in an iced bath. The temperature fell and the twitching stopped. A few hours later pus burst through the incision and the trouble ended.

The convulsions twice disappeared as the temperature was reduced, in spite of the fact that the primary cause, the abscess, remained. This shows that the immediate cause of the convulsions was the pyrexia, and that the sepsis was only an indirect cause. Similarly indigestion, acute otitis, or dentition cause convulsions only when they raise the temperature. It is noteworthy that the rectal temperature not only did not fall, but rose 1° during the first 7 minutes of the bath. The writer has often observed this, and it seems to show that a bath for a short time is useless. No directions as to the duration of a bath can be given: that must be regulated entirely by the effect, and by the thermometer in the rectum. Skin temperatures are, of course, useless. But it may be remembered that when once the temperature has begun to fall it will continue to do so, even after the child is removed from the bath.

A boy, aged 5 years, had whooping cough and bronchial catarrh. While in bed-clothes his hands began to twitch and his eyes to become fixed. The temperature was found to be 103° . All bed-clothes were removed, and he was left exposed in the bed with nothing on but thin pyjamas. The twitching ceased almost directly after the exposure began, and temperature fell to 101° in an hour.

A girl, aged 2 years, was noticed to be very feverish all day. In the evening 3 convulsive fits occurred within half an hour, although she was kept in a hot bath all the time with cold to the head. On the writer's arrival she was still in the bath and having a fourth fit, with a rectal temperature of 106° . He made the bath quite cold; in a quarter of an hour the rectal temperature had fallen to 102° , and, though she was still unconscious, the rigidity had completely passed off, and no further fit recurred. She was then kept naked on a bed, with a bucket of ice at each side and only a sheet laid over all, for 2 hours. Then she had regained consciousness, and the temperature was nearly normal. Next day she passed two large round worms and also suffered from severe diarrhoea for a fortnight. Possibly the worms were the cause of the pyrexia. More probably the cause of both the pyrexia and the subsequent diarrhoea was a feed of bananas, and the worms only came away because their hostess made it too hot for them.

The frequency of malaria as a cause of convulsions is not realised. In many cases the writer found that a child that had just got to the point of twitching its hands and legs got better directly cold bathing was applied. In one case, in spite of vigorous "derivative treatment," alternating hot baths and eiderdown quilts, with cold to the head, etc., the fits persisted throughout the day until the usual malarial evening fall of temperature. On a second occasion, the mother was able to check the convulsion at its onset, the twitching stage, by one cold bath.

Experimental support of the view stated is not wanting. Vallin, in some researches on sunstroke, exposed dogs to the full heat of a (presumably) tropical sun. The temperature began to rise from the first. He describes three stages of symptoms, and says that "finally the third period is characterised by convulsions to which death succeeds; at this moment the rectal temperature reaches 111° or 114° F." (The normal temperature of the dog is 103°).

A warm bath is usually recommended for the treatment of convulsions. But if pyrexia is the usual cause this treatment is wrong. To put a feverish child in a bath, say 10° hotter than itself, can only increase the pyrexia, even though cold be applied to the head. Few realise the extent to which an ordinary hot bath will raise the temperature of even a healthy person. The writer's temperature rose through 3.5° in a quarter of an hour in an ordinary hot bath averaging 106° . His son, aged 8, obtained a similar result in half the time. If the bath used for convulsions is only warm, as some direct, it will do less harm; and the subsequent exposure in drying will cause some loss of heat. But

unless the bath is colder than the child's body, it will not reduce the temperature, and will therefore be useless. And the colder it is, the quicker it will reduce the pyrexia. Shock may have to be considered, and the bath gradually cooled, but in an urgent case there should be no delay.—*The Medical Review*.

Atony of Bladder Treated by Fluid Extract of Ergot.

It is probable that the action of ergot on the bladder is somewhat analogous to its action on the uterus. In atonic conditions of the bladder very satisfactory results are secured by ordering the patient 10 drops of the fluid extract of ergot in one ounce of cinnamon water, to be taken three times a day. It is worth noting that this treatment is advocated in cases of hæmaturia associated with prostatic enlargement.—*The Practitioner*.

Skin Inunction as a Therapeutic Measure.*

BY

LAWRENCE F. FLICK, M. D.

Philadelphia.

INUNCTION as a health measure goes back very far in the history of mankind. The Romans practised it in the heyday of their civilization and we have reason to believe that they borrowed the practice from older nations. In the greasing of the skin by some of the wild tribes of the present day in various parts of the world we have the suggestion that at a very early time it may have been a general practice by all peoples. Inunction for the purpose of medication was apparently also practised in very early times by the Eastern people at the height of their civilization. For just what conditions they used it we do not know.

Theoretically, inunction ought to be one of our best therapeutic measures in chronic diseases, because it enables us to apply the medicine which we wish to give in a slow, even, continuous manner through the largest organ of the body. To get medicine into the system in this way is particularly valuable in diseases in which recovery depends upon a long, tedious struggle of the cells of the body against an invading micro-organism. In such diseases medication which carries the remedies into the system quickly and in large quantities may do harm. This harm

* Read by title at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

may not be direct, but may be indirect by interference with the physiological functions of important organs of the body. A drug, for example, which may even be tolerated by the tissues in large quantities may nevertheless interfere with digestion, assimilation and metabolism in such a way as to bring dire consequences upon the organism.

The skin is a very important organ in the economy of the body. It has many functions, some of which are very closely concerned with metabolism and nutrition. It excretes waste products, it helps to maintain a normal temperature, and it contributes something to the equilibrium of the circulation. It has the power of absorption, not as one of its chief functions, but secondarily and for protective purposes. It exercises this power through the lymphatic system, which permeates every part of it. The skin all over the body is well supplied with lymph stomata and lymph channels which run toward central trunks and empty into the blood-stream. The lymph nodes under the skin and draining the skin are somewhat restricted in their distribution and are found principally in the groin and the axilla. Absorption can undoubtedly take place in every part of the skin, although it is probable that it takes place more rapidly in those parts in which the lymph nodes draining the skin are situated. Inunction may therefore be made in every part of the body, but should be practised particularly in the axilla and the inside of the thighs.

The disease in which medication by skin inunction has received most general recognition is syphilis. Mercurial inunction in syphilis has been a well-recognized practice for a good many years. The system can be brought under the influence of mercury quickly in this way, and the influence can be maintained more evenly than by any other method of medication. The practical results have been excellent, perhaps the best obtainable.

For twenty years I have used the inunction method in the treatment of tuberculosis, having taken up the method on theoretical grounds, and my experience with it has been most satisfactory. I have applied iodine in this way. From time immemorial iodine in some form or other has been recognized as a valuable remedy in tuberculosis, but there has always been some difficulty experienced in its use on account of its disposition to upset the digestive tract and in that way interfere with nutrition. When I began to use iodine by inunction iodoform had some reputation as a remedy in the treatment of tuberculosis, and in using that drug I had gotten the impression that it frequently disturbed digestion and assimilation. I hit upon the idea of

inunction and found it quite easy to dissolve iodoform in codliver-oil and olive-oil and get it into the system by rubbing this solution into the skin. The results seemed better than any that I had obtained with the drug by the mouth, and really seemed better than any that I had obtained by any other medication given in any way whatsoever. Incipient cases of tuberculosis seemed to recover under these inunctions in a relatively short time; so short, indeed, that one got the impression that recovery depended upon the inunctions. There was one serious objection to the treatment, namely, the odor of the iodoform, and this objection could not be overcome by any disguise that could be given to the drug. So good were the results, however, that people who had used the inunction were in practically every instance willing and glad to continue it in spite of the odor, which attracted attention everywhere. A few years later when cresol iodide was put into the market I found in it a satisfactory substitute for iodoform in effectiveness of treatment, with the advantage of freedom from odor. I have since then used cresol iodide inunction as a routine treatment in all cases of tuberculosis. Like iodoform this substance gives striking results. I have never been able to demonstrate that these results are due to the iodine, but everyone must recognise the difficulty of doing this in a disease like tuberculosis, in which there can be no standard of pathological conditions and severity of the disease and in which nature itself does so much for recovery that it is impossible in any given case to differentiate between what nature has done and what may have been accomplished by medication. All that one can do in this disease is to give an honest opinion as to the value of any drug or method of treatment, and let that stand for what it is worth. After a long experience with iodine inunction in tuberculosis I am convinced that it is a valuable method of treatment.

There are other forms of iodine besides cresol iodide and iodoform which can be used for inunction. Iodized oil, which is much cheaper than solution of cresol iodide, gives satisfaction, although it does not seem to me to be as useful as the latter. I have an idea that part of the value of cresol iodide and iodoform lies in breaking down after absorption, with production of nascent iodine, but for this view I have nothing but an impression. There are quite a number of iodine compounds similar to these two which may be used, but some of them break down too rapidly and others too slowly. The preparation should hold up long enough in the oil to enable the patient to have a fair quantity put up at one time, without having it spoil for him. There are preparations which are much richer in iodine than cresol iodide, and which would probably be more valuable for inunction purposes were it not that they

break down almost immediately when dissolved in oil, and therefore give practically an iodized oil. Most iodine compounds are soluble in codliver-oil and olive-oil in the proportion of about one dram to two and one-half ounces. In essential oils, such as oil of anise, oil of gaultheria, and the like, they are soluble in the proportion of one dram to two ounces. They have about the same solubility in hydrous wool-fat. In prescribing preparations of this kind an effort should be made as far as possible to make them agreeable and pleasant to the sense of smell.

A secondary effect of the inunction which perhaps contributes a good deal to its usefulness is the stimulation of the vasomotors in the skin by the rubbing and the gaultheria. With a view of increasing or diminishing this influence the amount of gaultheria can be increased or diminished. It is quite possible, too, that the gaultheria itself may have a medicinal influence, as may also the oil of anise. The gaultheria is particularly valuable in those cases in which patients complain of a great deal of pain, more or less fugitive in character, in various parts of the body, probably due to the absorption of toxins from some of the micro-organisms which produce mixed infection of a kind which is non-febrile.

In recent years I have extended my inunction treatment with marked benefit to the pharynx in those cases in which there is a chronic granular pharyngitis. In tuberculosis this unhealthy condition of the lymphatic tissue of the pharynx and the post-nasal pharynx, apparently due to a mixed infection of some character, occurs quite often. It is a great source of annoyance to the patient, and appears to be an impediment to recovery. It is a troublesome condition which does not readily yield to treatment. I have found inunction of these parts, especially around the tonsils, with a saturated solution of cresol iodide in equal parts of oil of anise and oil of gaultheria the most effective treatment with which I have had experience. I apply the oil on a pledget of cotton, rubbing it in with considerable vigor.—*Monthly Cyelopædia & Medical Bulletin.*

Therapeutic Possibilities of Pineapple Juice.

Williams remarks that some years ago Morcano discovered that this juice had the power of digesting proteins. Chittenden showed that the juice in a fresh condition contained an enzyme or enzymes of a proteolytic nature, active either in acid or alkaline carbonate media. The enzyme is more nearly related to trypsin than pepsin, and has been called bromelin.

Along with this enzyme there appears to be in the juice citric acid to the amount of 8 or 9 per cent., as well as sugar and some albuminous substances. After further discussion of the chemistry of the juice, the author proceeds to relate some experiences with it. In cases of quinsy, suppurative tonsillitis and pharyngitis he considers it most useful. The bromelin digests off the neurotic tissue, often giving rapid relief. He has also found it of great value as a local dressing for bed sores, care being taken to confine the dressing directly to the sore, and not to apply it to the skin around. In furuncles local application of the pineapple pulp shavings invariably establishes free drainage within a short time. Recurrent urethral gonorrhœa, where there is copious discharge, may yield promptly to injections of the juice. Here dilution is preferable in beginning the treatment, increasing the concentration gradually and cautiously day by day. In cleaning up wounds pineapple juice will dissolve clots and render them more easily removed by the peroxide of hydrogen. In the treatment of gastric disorders it does not appear to have any place. Specially it should be avoided in cases of cancer of the stomach. But with *prevention* of symptoms of acute indigestion it may be most useful as an adjunct to a meal of heavy indigestible food. Bromelin has an advantage over pepsin in that it is not nauseating, is more easily obtained and administered, and acts promptly in almost any kind of media and variation of temperature. Also it is preferable to trypsin and vegetable proteolytic enzymes in that it is more palatable, serving as a dessert rather than a drug, and specially in that it is so readily obtained in its most active condition.—*The Australasian Medical Gazette.*

Adrenalin.

Attempts to isolate the active principle from the suprarenals culminated in 1901 in the preparation by Takamine of a crystalline body, to which he gave the name of adrenalin. Dakin has synthesized it artificially from pyrocatechin, and made a series of similar bodies, showing that their activity depended on the presence of a catechol nucleus. Its formation in the medulla of the suprarenal is of great interest as this portion of the gland is developed as a direct outgrowth from the sympathetic nervous system. Nor is this the only example of such an association, for sympathetic paraganglia and structures, such as the carotid body, contain *paragangline*, a similar but more stable body.

Langley made the important generalization that the action of adrenalin on any part is the same as stimulation of the sympathetic

nerves to that part. Elliott, in extending these observations, has brought forward some facts which suggest that, after excision of the suprarenals, the muscles innervated by the sympathetic cannot be thrown into activity even by electrical stimulation of the nerves. Adrenalin appears, then, to be a chemical body essential for the activity of the sympathetic and is formed by a structure of sympathetic origin.

In using adrenalin we therefore have to consider what would be the effect of stimulating the sympathetic nerves to the part in question. It is curious that though the blood is alkaline, alkalis appear to destroy the activity of adrenalin in the test tube. Its therapeutical uses are greatly limited by the difficulty with which it is absorbed unaltered from the alimentary canal. The most striking action of adrenalin is a rise of blood-pressure, but many observers have failed to detect any rise when the drug has been given by the mouth. Yet it is not destroyed by gastric juice in a test tube. Probably the intense vaso-constriction it produces prevents its own absorption. Rolleston found that, given by the mouth in Addison's disease, it did raise the blood-pressure, but this is by no means the usual result. Schafer thinks that injured vessels are similarly more sensitive to adrenalin than normal ones, and that a selective vascular constriction may be thus produced even though no general rise of blood-pressure occurs. It follows that the drug is most effective when it can be applied direct to the point at which we wish it to act. Even after subcutaneous injection its general effect is much interfered with by the local constriction of blood vessels, which prevents its passing into the circulation until its activity has passed off.

Since Grunbaum suggested suprarenal extract for hæmatemesis, many instances of its successful use have been reported. Half drachm doses of the 1 in 1,000 solution of adrenalin chloride in $\frac{1}{2}$ oz. of water should be given every 3 or 4 hours. In addition to constricting the bleeding point, it stops peristalsis. Like the sympathetic, adrenalin inhibits the movement of a hollow viscus, while keeping the sphincter controlling the exit closed. Herein lies its advantage over ergotin and the like. For these reasons it will often check vomiting, in doses of 10 minims of the 1 in 1,000 solution diluted with water. It should be tried in intestinal hæmorrhage, though it is doubtful whether the drug can get past the pyloric sphincter. Graeser checked severe intestinal bleeding in typhoid fever by three-hourly doses of 30 minims of the solution by mouth after ice, opium, ergot, and bismuth had all failed. It may be added also to an enema of starch and opium. As a precautionary measure a similar dose should be given about a quarter of an

hour before getting the bowels opened by enema after an intestinal hæmorrhage. By keeping the blood-vessels of the small intestine constricted, the walls flaccid, and the ileo-cæcal sphincter closed, it gives the ideal condition for emptying the large bowel by enema. Adrenalin has been recommended for gastro-intestinal atony; but in view of its inhibitory action on peristalsis, it is difficult to believe that it can be of service.

Exner found that intraperitoneal injection of adrenalin delays the absorption of poison introduced into the stomach or peritoneal cavity; thus strychnine required twenty times as long to produce its toxic effect; This gain of time is most valuable, and suggests the administration of a full dose of adrenalin pending the employment of other remedies.

Adrenalin is a powerful stimulant to the heart, augmenting its action like the sympathetic, but to produce this effect it must be injected intravenously. As it also constricts the blood-vessels, thereby raising the pressure, it may stimulate the cardio-inhibitory centre in the medulla, so that slowing of the heart through the vagi may be caused instead. The sudden vaso-constriction greatly increases the work of the heart, and if this cannot be met, dilatation may occur. The safest method is to give amyl nitrite at the same time, unless the blood-pressure is already low; this will flush the peripheral vessels, thus avoiding the extra work and the stimulation of the cardio-inhibitory centre, though not entirely eliminating the rise of pressure. The action of both drugs is about equally sudden and transitory. Ten minims of the 1 in 1,000 solution is the maximum dose that should be given intravenously at one time. Fortunately, it has been shown experimentally that adrenalin does not constrict the coronary vessels, for if it did it would almost certainly produce anginal attacks. In cases of shock, when the blood-pressure is lowered from dilatation of the splanchnic blood vessels, adrenalin is free from these risks, so that the amyl nitrite is unnecessary. It is becoming more recognised that many cases of "heart failure" in toxic states are really due to vasomotor paralysis, so that there is a considerable field of usefulness for adrenalin in such cases, if its mode of action is borne in mind. Crile showed experimentally that in profound shock it is possible to keep up the blood-pressure and maintain life by the continuous intravenous infusion of adrenalin in salt solution, 1 in 50,000 to 100,000. In the collapse of chloroform or opium poisoning it has also been found useful. In accordance with the general law that adrenalin only acts on structures which have a sympathetic innervation, it is interesting to note that it has no effect in blanching nævi, and only a transitory effect on granulations.

On perfusion of adrenalin through the pulmonary vessels Brodie and Dixon could not find any evidence of vaso-constrictors, a conclusion which most subsequent observers have confirmed. Therefore the drug should not be used in hæmoptysis. The blood which is being squeezed out of the rest of the vessels will be forced into the pulmonary vessels, which are unable to protect themselves by adequate vaso-constriction, and hæmorrhage will be aggravated unless the sole source of the bleeding is a bronchial vessel. The only reason why serious harm has not been done more frequently is that the drug has been administered by the mouth, so that it has had little effect. For similar reasons adrenalin is contra-indicated in cerebral hæmorrhage.

Many cases of the relief of asthma by adrenalin injection have been reported, but it is difficult to understand how it can be of service unless it constricts the bronchial, as opposed to the pulmonary-vessels. Amyl nitrite, which would produce a diametrically opposite effect, is also claimed to do good. Systematic observations of the blood pressure may explain this contradiction by revealing that some cases have a high and others a low pressure, and that adrenalin only benefits the latter group. Jagic believes that it acts by stimulating the sympathetic nervous system.

In hæmophilia, Schlesinger has given adrenalin in doses of 10 to 20 minims by the mouth for intestinal bleeding with success. Improvement has followed its use in purpura, though it is difficult to imagine how small doses of a drug which is probably not even absorbed from the stomach could affect hæmorrhages resulting from an altered condition of the blood.

Injection of adrenalin to prevent recurrence of ascites or pleural effusion was first advocated by Barr, of Liverpool, in 1903. A drachm of the adrenalin chloride solution with $\frac{1}{2}$ per cent. solution of chloretone in 2 drachms or $\frac{1}{2}$ oz. of sterilized water is injected through the trocar when the serous exudation has been withdrawn. Plant and Steele suggest that as adrenalin added to serous exudation causes some coagulum, it glues together the layers, and thereby promotes adhesions. Langdon Brown reports abundant fibrous coagula in the peritoneal cavity post-mortem following this treatment.

For removal of foreign bodies and other operations on the eye, Darier recommends 10 drops of the 1 in 1,000 solution added to 10 c.c. of a 1 per cent. solution of cocaine. MacCallan thinks it is risky to employ it in glaucoma, as he has seen it cause a rise in tension. Its blanching action has rendered adrenalin of considerable service both for diagnosis

and treatment of diseases of the nose, for it is rapidly absorbed by the nasal mucous membrane. For similar reasons it is a palliative in hay fever. In affections of the bladder it has been used with cocaine for anæsthetic purposes. Duncannon reports favourably on its use in catheterization, in the pain and strangury of acute gonorrhœa, and in the hæmaturia of enlarged prostate. In the form of ointments it certainly seems to alleviate hæmorrhoids. In uterine bleeding it may be looked to to produce a double effect, constricting the bleeding vessels and causing contractions of the pregnant uterus. Both Cushny and Dale have shown the curious and interesting fact that adrenalin relaxes the non-pregnant and contracts the pregnant uterus. Such contractions are, however, inadequate to induce labour. In local anæsthesia adrenalin is an adjunct which prevents the escape of the anæsthetic from the field of operation by constricting the blood-vessels in the neighbourhood. In this way the general toxic effect is diminished, while the local anæsthetic effect is increased. In using adrenalin in this way it must be remembered that cocaine, novocaine, and alypin either have no influence on the action of adrenalin or slightly increase it; while eucaine, tropocaine, and possibly stovaine, have a markedly antagonistic reaction, considerably decreasing the activity of the drug. There should be no trace of soda in the fluid used for boiling the syringe employed, since adrenalin is rapidly destroyed in alkaline solutions.

The treatment of Addison's disease by suprarenal extract has so far been disappointing. Nothing comparable to the success of thyroid medication has been recorded. Adam collected 105 cases treated in this way, and found that in 49 it had no effect, in 39 there was considerable improvement, in 16 there was permanent benefit, while in 7 alarming or fatal results occurred. Lloyd-Jones recorded a case in which cure followed the administration of twelve tablets a day. Gullan reported 2 cases; in one the treatment did no good, in the other apparent recovery occurred after giving 18 tablets a day. The best results have been in chronic cases, and ones in which there was no additional lesion elsewhere. Diminution of pigmentation has been recorded as a result of the treatment. Perhaps paragangline, pituitrin, or the artificially synthesized substances, which are more stable, and therefore more continued in their action, may prove more successful. Like most powerful drugs, adrenalin has its dangers. The mechanical effects of the high blood-pressure it produces may result in intense pulmonary congestion or petechial hæmorrhages in the brain, while a continued rise of pressure from repeated doses may cause atheroma. Glycosuria has been noted, and necrotic areas in the liver and kidney have been found post-mortem.

These bad results have been observed only after intravenous injection.—
The Medical Review.

Senna as a Purgative.

Much good work has been done by the study of the effect of different purgatives upon the digestive tract by means of X-ray observations after a bismuth meal, and accounts of these observations have already appeared in these columns. Dr. Hertz, of Guy's Hospital, was one of the pioneers in this work, and his observations on the normal rate of progress of food through the stomach and intestinal tract and of the variations under different conditions are already well known. More recently Dr. E. Stierlin has investigated the effect of senna as a purgative by the same method of observation. An account of his work appears in the *Munchener Medizinische Wochenschrift*. His subjects for observation were three boys, aged eight, nine, and fifteen years respectively. The first thing in the morning 20 grammes of bismuth carbonate were given in 400 c.c. of warm water. The first meal was given two hours later and afterwards the usual meals during the rest of the day. Radiographic observations were made at intervals of two hours during the day. In the evening a soap-and-water enema was given and followed by a black stool. Two days later the same proceeding was repeated, but half-an-hour before the dose of bismuth carbonate 10 grammes of macerated senna pods were administered, and another 20 grammes at the same time as the bismuth dose. By comparing the two series of observation the author found that the senna only affects the peristaltic movements of the large intestine. It has little or no effect upon the movements of the stomach and small intestine. As soon as the senna reaches the cæcum and ascending colon it produces a complete evacuation of almost the whole contents of the colon, and this evacuation is repeated several times as long as any senna remains in the large intestine. The author therefore concludes from these observations that senna is an ideal purgative, causing, as it does, a complete evacuation of the lower bowel.—
The Hospital.

OBSTETRICS AND GYNÆCOLOGY.

The Treatment of Placenta Prævia.

BY

E. NAPIER BURNETT, M.D., F.R.C.S.E.

The interests of the mother are frequently opposed to those of the child, at least in some of the methods. These are as follows:—

1. Rupturing of membranes.
2. Plugging of vagina.
3. Use of dilating elastic bags.
4. Cæsarean section:—
 - (a) Vaginal.
 - (b) Abdominal.
 - (c) Supra-symphysial.
5. Accouchement force.
6. Bi-polar version.
7. Palliative or expectant treatment.

1. *Rupturing of Membranes.*—Should the patient be in labor, with vigorous pains and the vertex presenting, this treatment is justifiable, for the head will be forced down on to the bleeding site and thus control the hæmorrhage. But these conditions are rarely present, and the following objections to this method are potent: (1) Malpresentations are frequent, and no other part except the vertex would exercise the pressure efficient to stop the bleeding. (2) The cases are exceptional in which the patient is in labor at the commencement of the bleeding. (3) The pains may cease and permit of further bleeding.

2. *Plugging of Vagina.*—Plugging should be always done by antiseptic gauze rather than cotton-wool. This treatment has the advantage that it tends to induce labor, but it is indicated only when there is a doubt as to the diagnosis, *i.e.*, when one has been unable to feel the placenta when there may be placenta prævia lateralis or accidental hæmorrhage. The objections to plugging are: (1) The bleeding may continue behind the plug. (2) Plugging in haste is often followed by sepsis.

3. *The Insertion of Dilating Bags within the Internal Os.*—The membranes should first be ruptured, so that the dilating bag be inserted within the amniotic sac. Barnes' bags are now seldom used; much better is De Ribes' bag, which is inserted in the collapsed state by a special forceps and thereafter filled with saline or some antiseptic fluid. The objections to the treatment are: (1) The bag may rupture. (2) It is often not at hand or ready for use when required. (3) It is difficult to apply in private practice. (4) It sometimes fails to induce labor. (5) When a weight has to be applied to the end of the tube, thus producing forcible dilatation of the cervix, rupture of the uterus, with fatal bleeding, has occurred. (6) Infection may be carried up from the vagina.

4. *Cæsarean Section.*—Some 18 years ago the high mortality of placenta prævia induced Lawson Tate to condemn the ordinary treatment, and to suggest Cæsarean Section. This suggestion lay dormant until

recently, when it has been revived. It is now strongly advocated by a section of the German school, and especially by Kronig. But placenta prævia is an emergency of general practice demanding treatment on the spot, and Cæsarean Section is suitable only for hospital cases and even then is seldom justifiable, for its maternal mortality is no better than that of some of the older methods *when efficiently applied*. As regards the improved prospect of the child, one is rarely justified in risking the mother's life by such an operation, for the production of a sixth, seventh, or eighth month's foetus, whose prospects of survival are meagre. The indications for Cæsarean Section are few, but in certain selected cases it may become the operation of election, such as (1) placenta prævia in primi-paræ with rigid cervix or tumor of cervix; (2) placenta prævia centralis in primi-paræ; (3) cases complicated by pelvic deformity. In the great majority of cases of placenta prævia Cæsarean Section is no advance.

5 *Accouchement Force*.—Rapid dilatation of cervix, with forcible extraction of child. Troube strongly condemns this treatment, and quotes a large maternal mortality from it.

6. *Bi-polar Version* of Braxton Hicks.—*This is the treatment of placenta prævia for general practice, and if it is applied immediately the diagnosis is made; and if the practitioner will rest content when he has brought down a foot and not proceed to forcible extraction of the child, he will reduce the maternal mortality to something approaching that claimed for Cæsarean Section.* But this treatment has not produced its best results, largely because it is not adopted the moment the diagnosis is made, but reserved until the patient is in an extreme condition. Further, its good results are much impaired when the practitioner becomes impatient and proceeds forthwith to extract the child.

7. *Palliative or Expectant Treatment*.—It is to be regretted that this treatment is still advocated in some modern text-books, e.g.: "If the loss of blood be slight, and especially if the foetus be yet viable, the expectant plan is indicated. The patient should lie down, be lightly covered, use cold drinks, and if much pain or restlessness be present, opium may be given. She ought to be directed not to take exercise, to avoid as much as possible the erect position and all straining at stool. It would be well if there was some one at hand who was properly instructed in the application of the vaginal tampon, so that this may be at once used, should grave hæmorrhage occur." So long as this teaching is followed the high mortality of placenta prævia will continue. It is bad, no matter what the period of gestation, or whether the child be viable or not.—*The Canadian Practitioner & Review*.

Vaginal Douches of Lactic Acid.

As the result of numerous investigations it has been shown that lactic acid is present in the normal vagina up to a strength of 0.3 to 0.5 per thousand. Dr. N. Cukor, argues from this fact that lactic acid should be used in vaginal douches in place of lysol, bichloride, and the rest of the ordinary drugs used, which are all more or less irritating. He believes that healthy women should use these douches daily to replace the lactic acid lost after bathing, etc., and declares that they hasten the return to the normal condition after menstruation. In cases of much discharge from the uterus or cervix their employment is indicated. Erosions of the cervix and catarrhal conditions of the genital apparatus are rapidly cured by them, and they can effectually be made use of in the place of all other antiseptic solutions.—*The Canadian Practitioner & Review*.

Complete Treatment of Eclampsia.

The mortality rate of eclampsia in the United States is still about 33 per cent. according to Dr. B. C. Hirst. He believes that thorough treatment along the lines which he lays down in the *American Journal of Obstetrics & Gynecology* will reduce this mortality below 10 per cent. Two ounces of castor oil with a minim or two of croton oil are introduced into the stomach with a tube; purgation is continued by 2-drachm doses of concentrated Epsom Salts solution if the patient is able to swallow. Lavage of the stomach and colon are carried out. Diaphoresis is effected by thirty minutes in a sweat cabinet every four hours. After the first sweat a quart of salt solution is injected under the breasts, and subsequently at least as much per rectum after each sweat. If the blood-pressure is above 180 m.m. of mercury, 16 oz. of blood are withdrawn by venesection. Fifteen minims veratrum viride is given hypodermically; and afterwards $\frac{1}{16}$ grain of nitroglycerine every four hours. Chloral and chloroform are sometimes used for convulsions, but are regarded as unimportant. One grain of parathyroid extract is administered every four hours. If labour is going on, the membranes are punctured, but no form of *accouchement force* is allowed. Finally, treatment on this distinctly heroic scale is continued with lessening severity for a week after convulsions cease.—*The Hospital*.

OPHTHALMOLOGY.

The Treatment of Corneal Ulcers.

BY

A. W. ORMOND, F. R. C. S.

It is important to heal corneal ulcers in the shortest time, for all ulcers which involve the substantia propria result in a permanent impairment of its transparency. Before commencing treatment, thorough elamination is essential, because there is an appropriate treatment for many of the various ulcers. It is useless to attempt to treat a dendritic ulcer with simple ointments and lotions. A good light is invaluable for inspection. If the photophobia is extreme a drop of a 10 per cent. solution of cocaine will help to relieve some of the blepharospasm. Except for this use, however, cocaine is contra-indicated in corneal ulceration. An alkaline solution of fluorescein is very useful in ascertaining the position and extent of the involved area. The cornea, where the epithelium is intact, remains unstained, but wherever the epithelium is absent, the stain remains in the depression, which in about a minute is coloured a bright green. This shows in contrast with the darker background. Having ascertained the position and size of the ulcer, it is necessary to note its colour and the degree of surrounding opacity. The more marked this is, the more septic the ulcer. It is particularly important to notice how far the grey infiltration extends beyond the area stained with fluorescein, because that gives some indication of the extent to which the corneal tissue proper is infiltrated. Further, the presence or absence of hypopyon should be noticed, and any undermining of the edge of the ulcer. If the ulcer is caused by a foreign body, this should be removed. It should be a routine practice to inspect the lacrymal sac, and by pressing over the inner canthus to ascertain whether there is any purulent discharge from the canaliculi.

Treatment of a Simple Uncomplicated Corneal Ulcer.—First, all discharge should be removed from the conjunctival sac by freely irrigating with warm lotions. This cannot be effectively done by the patient. Although we are compelled frequently to trust to a series of bathings with an eye bath or other means carried out by the patient, when possible wash out the conjunctival sac yourself. The patient should be placed on a table or couch and lie on his back. Mix the lotion with an equal quantity of warm water in a clean basin or tea-cup and soak some pieces of cotton-wool or clean rag in it. (More convenient to use, but not always at hand, is an Undine). Stand behind the patient's head and with thumb and finger of one hand gently separate the lids as far as possible, without hurting the patient. Take the soaked wool in the

other hand and, holding it above the eye, squeeze the wool so that the lotion runs in between the parted lids. Continue the washing until the lotion runs clear. If ointment is used, draw down the lower lid and put a small piece over the edge of it.

Having thoroughly washed out the conjunctival sac, a drop of atropine solution should be used, and a little iodoform insufflated. Photophobia is frequently a distressing symptom, especially in children, and should not be allowed to continue untreated, but, as far as possible, the eyes should be protected from light either by a large shield or dark protecting glasses. The shield can be easily made by cutting a piece of cardboard into a $\square$ shape, attaching a piece of tape to its two ends, and covering the card-board with some dark material. The patient should on no account be allowed to keep his eyelids firmly screwed up, and if the photophobia is extreme, canthotomy should be performed: that is dividing the orbicularis palpebrarum at the outer canthus, so as to diminish its sphincter action. If the patient suffers great pain, dionine is useful as an analgesic. It may be mixed with iodoform and used as an insufflation, or it may be dissolved with the atropine; an ointment is sometimes, however, more convenient. The writer recommends the following: dionine, gr. xx.; iodoform, gr. xx.; atropine sulphate, gr. iv.; vaseline to 3i. Leeches have become unfashionable; but when the pain and congestion of the eye are considerable, a couple of leeches applied to the temple often act as a charm. Blisters also are useful as counter-irritants. If the discharge is considerable the eye should not be tied up; on the other hand, a bandage keeps the lids at rest and helps to support the inflamed and softened cornea, so preventing the newly-formed epithelium from being rucked up by the lids. Also it aids in lessening any distortion of the cornea, resulting from a yielding of the softened inflamed structure to the intra-ocular tension. If the patient is a young child who might pull off the bandages, it is well to keep the arms in splints.

Constitutional treatment should always be employed, a brisk purgative administered early, and regular attention to the action of the bowels should be insisted upon; tonics and, in phlyctenular cases, cod-liver oil should be given. The compound syrup of the phosphate of iron or the syrup of the iodide of iron is very useful. The patient should be kept in the fresh air as much as possible; diet should be plentiful. Alcohol is not contra-indicated unless the eye is very congested or iritis is present.

Some of the special ulcers which require particular treatment are the following :—

Serpiginous Ulcer with Hypopyon.—A large percentage of these ulcers are infected by organisms derived from a suppurating lacrymal sac, a number being due to the pneumococcus. Therefore carefully examine the lacrymal apparatus. If that is the source of infection the lacrymal sac should be at once removed; on the other hand, if the source of infection is elsewhere, the ulcer must be treated directly. In these ulcers the organisms producing suppuration are in the *substance* of the corneal tissue itself, and their position is marked by a sinuous grey line, which can usually be seen extending beyond the ulcerated area. Ointments and lotions applied to the conjunctival sac will not reach them: it is necessary to "dig down" into the corneal tissue, and so "throw out" the offending organisms. The best method is by means of the galvano-cautery. The conjunctival sac should be washed out and a few drops of solution of cocaine, 10 gr. to 1 oz., should be applied, the lids being kept apart by a speculum. The needle of the cautery should be of a dull red heat and applied over the whole of the ulcer and beyond its edge into the clear area of the unaffected cornea. Avoid perforating the cornea. The main objects are to destroy as far as possible the microbes lying deep in the cornea, to remove dead material at the base of the ulcer, and to provide a channel of escape for the inflammatory products present in the substance of the tissues. Unless the growing edge is destroyed, the infection will spread in a few days, the corneal tissue will be destroyed, and a dense scar result. It is unwise to limit the use of the cautery to the ulcerated surface, because it almost certainly will fail to stop the invasion. Although a scar will result wherever the cautery is used, the scar will not be so large as would result if the ulcer should still spread on, and it is possible that if left alone the ulcer would destroy the whole cornea. During the few days subsequent to the use of the cautery the eschar is thrown off, and if no further extension takes place the ulcer may be treated as a simple ulcer, but it will take from 6 to 8 weeks to heal. The hypopyon need not be interfered with; it always disappears as the ulcer heals. Another method of treating these ulcers was devised by Prof. Saemisch, of Bonn—making an incision through the whole of the cornea in the line of the densest part of the ulcer. Free exit is thus given to the microbes and inflammatory products. Prof. Saemisch made the incision horizontally, but Mr. Higgens always makes it vertically, which minimises the risk of prolapse of the iris.

Sloughy Ulcer.—If the ulcer is large and suppurating, but the edges not deeply undermined, the organisms can be reached directly from the front. It is sometimes sufficient to scrape away the sloughy tissue from the surface and apply pure carbolic acid to the ulcer. Pure carbolic has many advantages; it is a powerful antiseptic and an analgesic, and the scar is not increased by its application. It is very useful in infected ulcers, and may be used in cases in which the cautery seems too drastic a remedy. Quinine has been highly recommended for sloughy ulcers, and in large infiltrated and infected ulcers without undermining is very useful. It should be prescribed as drops and lotion in the strength of 4 grains to the ounce, and used 4 times a day with an eye bath so that the solution is kept applied to the corneal surface for 5 minutes at a time.

Dendritic ulcer is superficial and of little density, with a tendency to spread by branching. It is generally seen to come from the margin of the cornea, across the pupillary area, sometimes reaching the opposite side. It is a kind of herpes of the cornea, and the lesion is probably connected with the nerve terminals in the epithelium. It is essential to apply the remedy below the epithelium. Cocainise the eye, and vigorously rub over the surface of the cornea a small pledget of wool soaked in absolute alcohol, so as to remove the epithelium from the substantia propria. By this means the ulcer may be cured in 3 days. If, however, the condition has not been recognised early, secondary infection may have taken place, and then one application of the alcohol may not be sufficient, and the treatment will have to be repeated twice or thrice.

Some patients show a marked susceptibility to atropine, a violent dermatitis resulting at once. In such cases homatropine, iv. gr. ad ʒi.; scopolamine, ii. gr. ad ʒi.; duboisine, ii. gr. ad ʒi., or nuphtalmine, iv. gr. ad ʒi., may be substituted. In phlyctenular ulcers finely powdered calomel insufflated into the conjunctival sac acts beneficially in two ways: the mechanical irritation of the powder stimulates the conjunctiva, and so improves the circulation in it, and the powder remains in the conjunctival space and is slowly absorbed, the result being that the eye is constantly bathed with an antiseptic lotion. Finely-powdered iodoform may be used instead of calomel in sloughy ulcers, and acts excellently.

Treatment of the Resultant Scar.—Corneal scars can be treated with gratifying results if only the treatment be started early and continued for months or even years. The younger the patient the more hopeful the result. The principle of treatment is this: some of the opacity is

due to inflammatory products which are capable of being absorbed, and we aim at increasing the lymph circulation through the cornea and the vascular circulation of the conjunctiva and sclerotic. For this purpose mildly irritating ointments and drops and lotions may be used, such as ung. hyd. ox. flav.; guttæ cupri sulph., ii. gr. ad ʒi.; guttæ zinci sulph. gr. ii. ad ʒi., and dionine 5-10 per cent. When used locally, dionine causes an intense hyperæmia and œdema of the conjunctiva with some tingling pain and lacrymation, and marked improvement in the absorptive powers of the lymphatics results.—*The Medical Review.*

DERMATOLOGY.

Notes from the Clinical Museum.

By

SIR JONATHAN HUTCHINSON.

One-sided or Local Hypertrophies.

UNILATERAL development is definite in an important series of our portraits. One of these, taken from Bilothe, shows overgrowth of the whole of one left lower extremity. The limb is longer very considerably, perhaps an inch and a half, than its fellow, and larger in all dimensions. The whole limb is covered with varicose veins.

That portrait is of much interest in reference to a young child who was the subject of demonstration at the Polyclinic in November, 1909, sent to me by Dr. Stocker, of Forest Gate. In that case an infant, six months old, had its left upper extremity much larger in all dimensions than the right. The limb seemed well developed in all respects, being simply larger and fatter than its fellow. On the hand, however, there were peculiarities. In front of the ball of the thumb there appeared to be a deep-seated varix; the blueness of this was visible through the skin, as also a few tortuous venules. On the ulnar side, extending from the base of the little finger to the pisiform bone, there was what looked like the somewhat puckered scar of an incision. It was probably the remains of a shrivelled venous nævus. Then conditions suggested that there was dilatation of the deep venous system of the limb, which explained the overgrowth, but of which no appearances came to the surface except on the hand.

Our Museum contains a remarkable drawing of one-sided excessive development of the superficial veins. The portrait is that of a girl in whom the whole of the left side is discoloured by dilated veins and capillaries. The condition is bounded, both back and front, with much abruptness, by the middle line. The face is affected, but not nearly so

severely as the trunk and limbs. There is no obvious overgrowth of the side affected, which is suggestive of the inference that only the superficial blood-vessels were involved. The drawing was given us by Dr. Fletcher Little, under whose observation the patient was.

Almost parallel conditions to those described above are seen in another portrait copied from a drawing in the Calcutta Museum. A third portrait showing somewhat similar conditions may be found in the Saint Louis Hospital Museum, at Paris.

Several other drawings in our collection illustrate the association of hypertrophy of limbs, or parts of limbs, with enlargement of deep veins. This suggests that the overgrowth is in many instances primarily induced by over-supply of blood or retardation of its flow.

Defective Suppression of Hair Growth.

Examples of the defective suppression of the hair system in the human subject may be found delineated in several works of natural history. They are, however, seldom from photographs and not often reliable.

The two life-sized and coloured portraits given by Hebra in his "Atlas of Skin Diseases" are amongst the best. These, which represent father and son, show little more than the face and head of each. The cheeks, nose, forehead, etc., are covered with long hair.

The portrait of a woman who was exhibited in Europe some years ago, Julia Pastrana by name, under the designation of the "Hairy Woman of Mexico," shows the hair covering the forehead as low as the eyebrows, and occurring also on the whisker regions, chin and upper lip. Thus the regions of sexual hair in the male are definitely but by no means exclusively involved.

There was a growth of short hairs on the nose, whilst parts of the lips, eyelids, and fronts of cheeks were free.

The portrait of a girl, aged 2, which is given in the same collection, shows the whole of the trunk covered with coarse, long hair, which involves the upper extremities down to the elbows, but apparently not the face.

The "Hairy Family of Mandalay," given in the same work, is represented by the portraits of three adult or elderly men whose faces are somewhat irregularly covered with hair as in the portraits given by Hebra.

For the most part, the portraits of hairy men suggest that the face is the part most frequently affected.

It is important in all cases of apparent suppression to ask whether there is any evidence of over development of some competing structure?

Conversely, in cases of excess of some structure which is more usually suppressed, we must seek to find some structure which may usually be considered to compete, but is suppressed.

We may speak of the latter as suppressal which permits of or favours revivals or overgrowths. Thus the suppression of the sexual system both in males and females not infrequently permits of the revival of some other, as in the growth of beard, etc., in women. The hair system is, indeed, that which most frequently affords obvious illustrations of these laws. They are, however, intricate, and by no means of simple interpretation.

The girl who was exhibited in London some years ago under the name of "Krao, or the Missing Link," had a hairy forehead and was also more or less hairy on almost the whole of the surface of the limbs and trunk. The whisker regions and the skin over the deltoids were specially affected, but the nose and middle face were free.

Her dentition was very imperfect, the teeth small and widely separated. The muscular system of the child on the whole was poorly developed, and the intellect probably starved. See a detailed description by Dr. Garston, in the *British Medical Journal* for January 6, 1883.

Hebra's Portraits Illustrating Overgrowth of Hair.

The portraits published by Hebra illustrating overgrowth of hair exhibit only the face.

There are two individuals, father and son, the latter apparently an adolescent lad.

In both the whole face, with slight exceptions, is covered with coarse, strong hair. The eyelid regions are exempt, and to some extent the nose. The hair is much less abundant in the younger subject. The moustache is not definitely developed.

(These two portraits are now exhibited on a stand on the floor of the museum.)

Illustrations of maladies attended by pigment changes are placed in special portfolios suitably labelled. They are classified under the following heads: Albinism, Leucoderma, Melanopathia, Addison's Disease, Acanthosis Nigricans, Human Piebalds, Lentigo, Leprosic and Syphilitic changes, and some others.

The leucoderma of leprosy is displayed in the leprosy series, and leucoderma of syphilis under that heading, the so-called "leucoderma colli."

We have for long been devoting especial attention to this interesting group of pigment changes, and our Museum is well supplied with illustrations of them. Some of them are displayed in permanent frames, but the bulk are kept in portfolios, which can be produced on request to any of our members.

Quite recently some of the rarest and most puzzling of these conditions have, in my own mind, received important elucidation by certain facts, which appear to imply that they are not acquired conditions nor in any proper sense diseases, or symptoms of disease, but result rather from local peculiarities of organization, inherited by very distant descent from the lower animals. In order to designate this hypothesis I have been bold enough to supply the term paleogenesis, and to describe the affections supposed to be so produced as paleogenetic. I have, during the last year, frequently stated my views on this subject in lectures at the Polyclinic in connection with cases which have been before. For the present I must be content to simply allude to it in order to make clear some references which are to follow.

The condition known to gynecologists and others as the linea fusca offers us a good and perhaps one of the best examples that can be given of paleogenetic manifestation.

The Linea Fusca.

The "linea fusca" in the middle line of the abdomen, once regarded as a concomitant of a first pregnancy, is now well known to occur in many other conditions in both sexes, and even in infants. Possibly, indeed, it is always a congenital condition, and represents a bar often observed in the fur of some of the lower animals.

It has been often seen in sterile women, and in men, and Dr. Adersen, of Copenhagen, has given us some statistics as to its frequency in young children. He found the line in seventy-six girls and forty-two boys. They were of all ages up to fourteen years; and it may be observed as early as fourteen days, but is ill-marked during the first months. Lateral deviations or streaks have been observed by Schoenberg. It is generally admitted that a tendency to brown pigmentation frequently becomes marked during pregnancy, and thus the linea fusca which was really present from birth may then become conspicuous. The linea fusca in adult men is often marked by the growth of hair. The following is a quotation from a paper of my own on the distribution of hair on the human skin, which I published some years ago in my "Archives": "In some persons a broad band of strong sexual hair passes down the middle of the chest and abdomen,

and widening as it descends joins with that of the pubes." This band in many animals is developed into an abdominal mane.

Pigmentation of Scar Tissue.

The pigmentation of the scars left by syphilitic ulcers, chiefly in dark persons, has been frequently observed. It occurs soon after healing, and is often, for a time, almost black in tint. It is seen chiefly on the legs, and in men.

Dr. Boxall has recorded a case in which, after ovariectomy in a pregnant woman, the scar, a month after her recovery, became almost black. It faded after delivery, but the colour did not wholly disappear.

Chloasma Uterinum.

"Chloasma uterinum" is illustrated in our Museum by two portraits from Hebra's Atlas, one that of a woman, the other that of a young man.

The young man is stated to have been cachectic, the subject of lichen scrofulosorum and "tumor lymphaticus in the left sub-maxillary region." In both portraits the prolabium of the lips, chiefly of the lower one, is very definitely pigmented. In both the pigmentation passes in bat's wings from the nose over both cheeks, and in both the moustache region of the upper lip is very definitely involved, whilst a white band on both sides separates it from the pigmented parts of the cheeks. In both the forehead is involved. The condition is much less one of detached spots than usually occurs in common freckles. In both the eyelid regions are comparatively exempt.

A third portrait, that of a woman, shows the parts involved much the same, but the patches continuous, and not in a freckle-like arrangement. The patient is a middle-aged woman.

As in the others, the eyelid regions are exempt. The forehead from the eyebrows upwards is one patch of brown, well margined above, and not continuous with the hair-bearing region. Some pigmentation of the prolabia is indicated but not so definitely as in the others. The case in which a young man is the subject is in no way distinguishable from that of the young woman. It appears to suggest association with scrofula.

Leucoderma.

That some forms, perhaps the majority, of the well-marked examples of Leucoderma are aggressive, has been assumed by most dermatologists, and if this is true they cannot be regarded as presenting any parallel with what should be known as the "piebald skin," which is permanent and unalterable.

A small number of cases (for one such see *New Sydenham Society's Atlas*) in which the entire skin of a member of the dark-skinned races becomes white, must, for the present, be kept apart, for in a large majority of cases no such tendency is observed. Although Hebra's experience led him to record the opinion that leucoderma generally commences in adult age, there can be no doubt that it chiefly begins in childhood, but is not then much noticed. We have a considerable number of photographs illustrating this point, and showing also that in a white skinned person it might be very easily overlooked.

Leucoderma and Piebald Skin.

In suggesting that, after all, leucoderma areata may be only a congenitally piebald skin, we assume that the white patches had been potentially present from birth, and were only made evident by pigmentation occurring in later life.

This would fit well with the fact that in almost all cases the patients themselves aver that they are becoming dark. I have many a time had to argue with a patient that it was the whiteness that was aggressive not the darkness, and I believe have never succeeded in convincing anyone. Possibly, indeed, they were, after all, correct. The condition is perhaps functional Addisonism occurring to a skin congenitally piebald. And we suggest that the human skin is like that of animals very frequently, either piebald in patches, or in spots, or in streaks. Under the laws of paleogenesis it is upon these peculiarities, dissimilar in different individuals, that a peculiar distribution in many skin diseases, but more especially in those involving only altered pigmentation, is due.

Here, probably, we have the explanation of limb eruptions, and of the peculiarities which have been observed in many eruptions assuming a paniculate distribution. Hebra taught that variola itself was paniculate, and no doubt, on close examination, this kind of arrangement might be observed in other exanthems. It is no longer necessary to suspect nerve distribution in all cases in which the eruption is at first sight more or less herpetiform, for it is possible that the herpetiform condition may be closely simulated by conditions due to congenital organization. We must no longer regard the integument as a blank sheet upon which, under unknown influences, disease can inscribe its patterns, but as one already occupied by a pattern which is not visible until made conspicuous by morbid changes.

Leucoderma in Dark Races.

Some of my portraits show advanced conditions of leucoderma in individuals of dark races. Two of them were copied from photographs which were given to me by Dr. P. Comrie.

These cases are two of those referred to in the printed descriptive catalogue of the Clinical Museum.

In both the face, for the most part, keeps its colour, but in both there are leucodermic areas around the mouth. The upper portrait is that of a woman of Negro descent, and the other of a Portuguese.

The question now arises whether the commonest and most pronounced form of what is now known as leucoderma or vitiligo is really a congenital condition of spotted skin made more or less conspicuous by race, season, or disease. It has been assumed by most of us, but perhaps rather hastily, that the white patches of leucoderma are always aggressive, but very few observations have been collected which really prove either the positive or the negative of this. I possess the portrait of a woman in whom the face was involved in large symmetrical leucodermic patches, and comparing it with the patient ten years later I found that the patches had not increased or altered in their form.

Is Leucoderma always Aggressive?

In the portrait of Leucoderma which I gave in the "Atlas" of the New Sydenham Society, and which is, perhaps, the best portrait of the affection as yet published, I procured an opportunity for examining the patient ten years after it was taken. I found little or no change in the form or size of the patches beyond such as might be referred to the growth of the boy. These facts would be compatible with the suggestion that the white areas are really congenital, although but seldom observed on the pale skins of young children.

Leucodermic patches always become much more conspicuous in summer, and may also vary in connection with the state of health of their subject.

Addisonism.

The term "Addisonism" is not my own invention, but I thankfully adopt it as a usual designation for changes in the tint of the skin due to the general health or state of the blood. It is not always attended by anything definite in the direction of what is known as Addison's Disease. Some slight degree of Addisonism probably occurs in the early changes of many cases of syphilis—a well known "earthy" or "muddy" tint of authors.

It is this which probably makes obvious on a skin congenitally piebald the appearances known as "leucoderma colli."

Many other morbid states of the system may probably be attended by temporary or permanent Addisonism, and are dependent upon functional disturbance in the suprarenal capsules,

Dr. Philip Brito, who had made observations on a coloured population in Ceylon, has recorded an instance of leucoderma in mother and daughter, with the important fact that the conditions in the parent were quite stationary, but in the daughter rapidly aggressive. As no details are given respecting the child, it may easily have been the fact that what was seen was only the normal evolution of leucoderma, (which is frequently observed in early life and is destined to cease in a few years), which was mistaken for aggressive spreading.

In the mother the white areas occurred on the lips, heels and hands. The latter were speckled over with spots from a pea to a florin in size, which persisted with little change from childhood to middle age. In the daughter at the age of 20 the exposed parts were so extremely white that she might have been supposed to be of European race.

The face in leucoderma usually escapes, and white patches of scalp hair are very rarely seen. This comparative absence of white hairs probably may be accepted as implying that leucodermic patches on the head and scalp are rare.

Several observers have recorded their belief that attacks of fever, erysipelas, influenza, and the like, may produce leucoderma. This is probably to be explained by the production of a temporary and functional condition of Addisonism, which has caused white patches by contrast.—*The Polyclinic.*

PAEDIATRICS.

Classification of Constipation in Children.

Gaujoux observes that chronic constipation, so frequent in babies, must be treated not symptomatically, but pathologically. The physiological condition of a regular evacuation in children are the following:

(1) The digestive tube must not be obstructed or too greatly contracted. (2) The intestinal secretions, which excite and lubricate the intestinal mucosa, must not be diminished. (3) The mucosa must be sensitive to the contact of the fecal material. (4) The nerve centres, which regulate the peristalsis, must not be changed or inhibited. (5) The muscular fabric must possess normal contractility. Hence arises a very great etiological diversity of constipation in babies. There are the following three groups of constipation.

1. Constipation from some obstacle in the regular course of the fæces.
2. Constipation from modification of the intestinal contents.

3. Constipation from defect in the action of the expulsive muscular fibres.

In the first group are included those forms with complete occlusion (volvulus, intussusception, atresia, stenosis), those with incomplete occlusion (congenital or cicatricial contractions, spasms, torsions).

The second group includes constipation from diminution of ingesta, from increased absorption of the liquid parts, or from too perfect assimilation (Schmidt), from diminution of the intestinal secretions (fever) from modification of the intestinal contents as regards the quality of the foods (the most frequent form in the clinic).

The third group comprises constipation from mucous anesthesia and absence of the evaculatory reflex (too warm lavage); from paralysis of the nerve centres which regulate peristalsis (solar and mesenteric plexuses); from primary atony of the intestinal musculature (Herschsprung's disease), or atony secondary to a neighbouring inflammatory process (peritonitis, enteritis).

Several pathogenic factors may be associated, but a clinical study of each case will enable the physician to dissociate these factors and to institute an efficacious treatment.—*The Canadian Practitioner & Review.*

The following Press Note is issued by the Sanitary Commissioner with the Government of India:—At the Bombay Medical Congress last year several papers dealing with the treatment of snake-bite were read. In one of them a suggestion that solution $K_2 MnO_4$ should be injected through the wall of a vein into the blood stream was discussed. In the course of certain experiments recently carried out at the Bombay Bacteriological Laboratory to test the value of Pot. Permanganate as an antidote for snake poison, it was necessary to ascertain by experiments on animals whether $K_2 MnO_4$ is harmless when injected into blood stream. The results of these experiments have shown conclusively that intra-venous administration of this drug is attended with grave danger and that this method of treatment should on no account be employed.

THE ANTISEPTIC.

OCTOBER, 1910.

The Silvery Cooum and the Madras General Hospital.



THE order of the Madras Government on the much-debated question of the removal of the Madras General Hospital from its present location is a very interesting document. Many people, including several medical men in Madras, thought that the present General Hospital building was situated in the midst of insanitary surroundings, and that the building itself—a merchants' godown of the 18th Century—was unsuitable for a 20th Century Hospital. Two committees appointed by the Madras Government considered the question. The first committee unanimously came to the conclusion that the existing site of the General Hospital and Medical College ought to be abandoned, and suggested that a new Hospital and College should be built in the Spur Tank "as no other site in or near Madras offered the advantages the Spur Tank provided." This decision of the first committee was promptly negatived by the second committee which by a majority came to the conclusion that the present site was good enough and need not be abandoned and that the existing building could be renovated. But the second committee also added a rider to their resolution to the effect that the part of the Cooum from Penitentiary Bridge to Wallajah Bridge ought to be filled up. We are here more concerned with the river Cooum than with the committees. Decisions of committees may change. But the Cooum does not change. But of late the Cooum has—thanks to the second General Hospital committee—got into the good graces of the Madras Government. The Cooum, we are told, has done no harm to the health of the inmates of the General Hospital. The mortality in the Madras General Hospital is not higher than that of the Bombay or Calcutta General Hospitals, and therefore the Cooum has in no way contributed to the unhealthiness of its picturesque valley. If we might argue from these premises we can point out that if the Cooum does not injuriously affect the health of patients in a hospital whose power of resisting morbid agents is necessarily less than those of the healthy inhabitants of the City who are outside the hospital, then the Cooum can do no possible harm to the public health of the city. Then all the libellous statements about the Cooum made by the City Fathers

and their subordinates for the last so many years must have been absolutely without any justification. Some time ago a Government sanitary expert reported that the Mylapore burning ground, situated within a few yards of the Marina and some public buildings and private houses, was not insanitary. Very well, then the Coom and the Mylapore burning ground being both perfectly harmless from a sanitary point of view, we might begin to look round and revise some of our old opinions about the insanitary condition of Madras.

But all the same the Government want to fill up part of the Coom near the General Hospital. If the present proposals are carried out we shall have some interesting developments. But that is another story. Part of the Coom is to be filled up—perhaps to reclaim the ground for future building purposes. That is not at all a bad idea. But while we are at it why not go a little further and reclaim the whole of the Coom. The idea, if we are not much mistaken, occurred to Mr. Standish Lee who was Engineer to the Madras Municipality some 30 years ago. Mr. Standish Lee made a proposal to divert the Coom at Chetput in to the Long Tank and through that to the Adyar river. The scheme is perfectly practicable and ought not to cost much. Once the river is diverted reclamation of its bed within the Corporation limits can be started. The scheme ought to pay its way and even something over. Of course it will interfere with the drainage system, especially with regard to the disposal of the storm water overflow. But that is the business of the Corporation Drainage Engineers. Mr. Standish Lee's idea is excellent, only it was a good deal ahead of his time. At present it is eminently practical. Will the Madras Government consider this wider question or will they still insist on going on with the work of filling up a few hundred yards of the Silvery Coom?

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Original Articles.

*PAIN IN CHILDREN AS AN INDICATION OF DISEASE.

BY

A. D. EDWARDS, M.B.; B. S. (LOND.); B. Sc., D. P. H.

Dep. Med. Off. Health and School Med. Officer, Bournemouth.



N the diagnosis of disease in adults, the medical attendant is guided to some extent by the patient's description of symptoms; in the case of young children he is dealing with little people who cannot tell him exactly what they feel, and it is therefore of the utmost importance that full use should be made of other means of obtaining information.

The physical examination of the child may result in definite knowledge; manual and instrumental examination may prove to be of great value. On the other hand there are many, very many cases of child illness in which physical signs are either entirely absent, or present in so vague a form and so slight a degree that they are useless as a framework whereon to build a reliable diagnosis.

Deprived of the aid both of physical signs and of described symptoms the medical man still has a useful source of information, that is, his trained observation; and such observation should go always hand and hand with an understanding of child nature, and the working of a child's mind. Even when we are dealing with the later years of childhood, when the child is able to express its feelings, our own observation should be very fully exercised, for it is frequently difficult to avoid leading questions in seeking information from a little patient, and a

* Specially contributed to *The Antiseptic*.

leading question will in the large majority of cases result in the answer "Yes". That answer will also surely be obtained if the child is in doubt as to the correct reply; and to a question to which "yes" or "no" may be replied, many children will say "yes" "because they thought the doctor wanted them to say yes." Observation, the careful watching of the child, should be therefore our most reliable source of knowledge.

In no instance is the application of this principle of greater value than in obtaining information concerning pain in children.

Aural Pain.

It occurs not infrequently that a child may be obviously ailing, restless and unwilling to take food, but may exhibit no physical signs distinguishable either by means of the stethoscope or of manual examination. Watching the child lying in the cot, one finds that it is fretful and continually crying; presently the hand is put up to the ear, and the restlessness appears to have an end in view, as if the child were manoeuvring for a favourable position of the head on the pillow. In ear disease a child will often lie on the affected side, the main point of support to the head appearing to be the parietal eminence, leaving the ear free from pressure.

Aural pain in childhood should never be neglected. It may or it may not indicate serious trouble. It may be caused by otitis media, or trouble in the external Auditory Meatus, or impacted wax, or it may betoken Eustachian trouble resulting from post-nasal conditions such as adenoids or enlarged tonsils. But whatever be the origin of aural pain its source should be thoroughly investigated. And an *early* diagnosis of the cause of the pain should be made. An early diagnosis of the cause must of course be preceded by an earlier recognition of the existence of the pain, and therefore a close observation of the child becomes of the greatest importance.

In this connection, I think that the negative history of past ear discharge is of little value. The discharge may have been unnoticed by the mother, or on its sudden cessation the mother may have thought it was all right and have forgotten about it in her natural ignorance of the possibly grave significance of the *sudden* cessation of discharge from the ear.

Growing Pains.

An examination of the heart should be made in the case of *every* child who complains of growing pains. An abnormality may or may not be discovered to be present, but in most cases these pains are an indication of the rheumatic tendency. Now the presence of Rheumatism in a child is a very real warning to us that the heart is at least in

danger of being attacked, and the very essence of treatment of heart disease in the child is Rest, and Early Rest, and Prolonged Rest. The fact that the Rheumatic pains are slight, "only the growing pains"—is no reason for neglecting to examine the heart; the main manifestation of Rheumatism in the child is not necessarily joint pain; the rheumatic toxin may make itself manifest in children, and I think does make itself manifest, more often in the various degrees of chorea, and of endocarditis, producing an amount of joint pain which may easily be overlooked by doctor and parent alike.

The subtle poison betrays itself more readily in the adult by producing pain; in children the pain may be very slight but the poison is at work quietly, producing more dire effects.

The limb pain which often accompanies the tiredness and lassitude of children after over-exertion, of European children in hot climates for instance, may or may not be Rheumatic; it so often is Rheumatic that a cardiac examination should never be neglected. It is better to examine a heart and find it normal than not to examine a heart and to miss a murmur.

Knee Pain.

Probably, a medical man trained at one of the British Universities has nothing more clearly impressed upon his mind than the fact that knee pain in a child may indicate the existence of Tuberculous disease of the Hip Joint. The possible reference of the pain along the obturator nerve should always be remembered, but the possibility also should not be lost sight of that the trouble is in the knee itself—Rheumatic, septic or tubercular trouble.

In a brief paper it is impossible to enlarge on these conditions, but I will mention a possibility which might be lost sight of in children—that of hysterical joint pain.

Hysteria in childhood is not very rare: usually it is imitative in the initial stage, and the child lives with a parent or other person who is either a chronic invalid or a neurotic patient. I recall the case of a child of about twelve years of age who gave a very full description of symptoms which on further enquiry I found to be those complained of by the neurotic mother, and heard so often by the child that they were appropriated for her own use.

Headaches.

The subject of headaches in children is a very wide one, but two causes may be emphasized as being always worthy of investigation—Astigmatism and Adenoids.

The frequent association of headaches with Adenoids is an accepted fact; it has been proved by the observation of experts; but its explanation is not easy. In the adult, nasal trouble may produce headache (brow-ague) by the implication of the frontal or maxillary and other accessory sinuses, but in children these sinuses, are not largely developed. I think the headache accompanying Adenoids in children may be due to one of two causes. Possibly the pressure of the adenoid tissue on the blood vessels supplying the head and brain—a phenomenon which is accepted by some authorities as the partial cause of the dulness of adenoid children—may produce the headache. The second possible explanation I have in my mind is based on the referred areas of pain worked out by Dr. Hy. Head. Inflammation and irritation of the middle turbinate bone produces pain which is "referred" to the brow, and it is very common to find in adenoid children a coincident inflammatory condition of the mucous membrane of the nose and turbinate bones which is either a predisposing cause or a resultant of the adenoid growths. I have found very frequently that the efficient treatment of nasal and post nasal condition has relieved the headaches, and no better test for the '*propter hoc*' statement is required.

The repeated headaches due to eye-strain and astigmatism are often very troublesome. Herein, refraction work is most valuable, for it is the slight degree of hypermetropia which is a most potent cause of headaches, and hypermetropia is more easily missed than the difficulties of distant vision, for the latter are more easily tested for by means of the Snellen's Test Types, etc. Astigmatism and Strabismus are equally important as causes of headaches; and the strain on normal eyes when the adolescent years, especially in bad light, should also be considered. Headaches are most easily produced in the nervous 'highly-strung' child, and in my experience this type of child is much more inclined to read late and long; the literary temperament is ever the nervous one, and because the literary temperament is one which is of great value to the empire it becomes most important to protect the child who possesses it, and to give to him or her the best chance of a favourable adolescence and of health in adult life.

These are some of the more chronic and recurrent headaches of childhood; the significance of the acute headache at the onset of the fevers is well recognised, as also its occurrence at the onset of Meningitis. In the latter connection, the Biblical picture may be recalled of the Shunammite's child "who cried 'my head, my head' and at noon he died." The recent work done on Bacilluria in children has brought out an interesting fact in the simulation of Meningitis symptoms by *B. Coli*

infection, the headache and vomiting being reproduced with a condition which appears to be of grave import to the child, but the rapid improvement in, and the eventual clearing up of the symptoms when the child is treated by Potas. Citrate and *Coli Vaccine* is often very remarkable.

The Mother-Instinct.

In concluding these few remarks on Pain in Childhood, I should like to emphasize the instinct of the Mother in the diagnosis of child-crying. It is natural for a healthy infant to cry; the full expansion of the chest and the muscular effort involved are beneficial to the child; they constitute the chief means of exercise. But there is the continued fretful cry which indicates either physical discomfort or pain, or ill-health, and a good parent is usually sufficiently endowed with the mother-instinct to enable her to make a diagnosis between the various kinds of crying of the infant.

I would mention an amusing instance of this which occurred a few years ago. A mother brought her infant child to me, and stated that he had been crying incessantly all day—"not his proper cry, doctor, but as if something were wrong." In order to examine the child, I asked the mother to undress him. The outer garments were removed, the under garments were loosed, and there was revealed a pin, the intended function of which was to fasten the clothes, but which was also continually scratching the tender skin of the infant. The incident taught the mother to use safety pins, and the incident recalled to my mind the lines of Tennyson

"An infant crying in the night
And with no language but a cry."

* THE CAUSATION AND PROGNOSIS OF MENTAL DEFICIENCY.

BY

H. EMLYN JONES, M. R. C. S., (ENG.), L. R. C. P. (LOND).

Medical Inspector of Schools, Essex County Council.

There are naturally certain possible causes of Mental Deficiency associated with particular types of such affection, but there are also certain general causes which I wish to consider next.

1. *Consanguinity of Parents.*—Opinions as to the importance of this factor vary from the popular notion that the children of first cousins are all defective to that held by some well-known authorities that consanguinity has no such results. In order to uphold their views, those who

• Specially contributed to *The Antiseptic*.

maintain that consanguine marriages carry with them an evil tendency, ought to be able to show that in children of such marriages there is a considerably larger number of cases of idiocy or other hereditary diseases than in the whole population—a fact they have been unable to prove. LANGDON DOWN found the number of idiotic or defective children born of first cousin marriages to be but 4.38 %, and IRELAND, out of 204 families examined by him, in which there were idiot children, found only seven marriages of first cousins and two of second cousins. In six of these first cousin marriages there were 42 children. In one of the families there were four mentally defective children; in two families there were two imbeciles each; and in three others one imbecile each. In the second cousin marriages there were 17 children, and in one of them two imbecile boys.

MR. GEORGE DARWIN says: "It seems probable that in England among the aristocracy and gentry about 4 % of all marriages are first cousins; in the country and smaller towns, between 2 and 3 %; and in London, as few as 1½ %. Probably 3 % is a superior limit for the whole population. Turning to lunatic and idiotic asylums, probably between 3 and 4 % of the patients are offspring of first cousins." From all published figures, it seems probable that marriages among cousins or other blood relations is not dangerous, provided there be no disease likely to descend by inheritance. But on the other hand, if there be a neurosis in the family, it would intensify the proclivity. Hence consanguinity of marriage only increases the chance of reproducing abnormalities which have been already present in previous generations of the family, and that when the offspring of first cousins are congenitally imbecile this is merely due to neuropathic heredity. This does not diminish the risk of such marriages, but, considering the large percentage of families in which one finds a neurotic taint, rather emphasizes such risk.

2. *Heredity*.—Idiots are frequently born in families in which there is a decided neurotic tendency, as manifested by the appearance of insanity, imbecility, mental deficiency and epilepsy. There are also certain nervous diseases which often occurs in different individuals of the same families, whilst other families are exempt. The children of epileptics are frequently insane or hysterical, and the descendants of the insane oftentimes epileptic or insane. Deafness, hysteria, and even chorea frequently occurs in the descendants as a result of an inherent neurotic tendency. KOCH found hereditary diseases in ⅓ of the cases he examined, and KERLIN in 27 % ROGERS in 25 %, and, LANGDON DOWN out of 2,000 cases of idiocy found well marked neuroses in the families of

one or both parents in as many as 45 %. Generally speaking, however, the hereditary tendency alone is insufficient to be the cause of the deficiency without the aid of other of these general accessory causes, which causes will naturally act the more strongly in those with a hereditary neurosis.

3. *Tuberculosis*.—A considerable number of idiots have parents affected with phthisis: a large percentage of the deaths of idiots and imbeciles are due to the same disease. Probably two-thirds of all idiots are of the scrofulous constitution, and much of the medical work connected with Training Homes for Idiots and in Defective schools consists in treating general and local manifestations of tubercle, such as suppurating glands, skin eruptions, ophthalmia, etc.

KERLIN, in 100 cases found the presence of phthisis in one or both parents in 56 %, and PIPER found the percentage in his analysis to be 23 %.

Hence it is obvious that the condition of malnutrition, designated scrofula, disposes also to imperfect nutrition and perhaps also of imperfect development of the nerve centres, but as only a small percentage of scrofulous children are deficient, there must be a further factor which helps in bringing out the deficiency.

4. *Alcoholism*.—There is not the slightest doubt but that drunkenness is a potent factor, both in helping to form an hereditary neurosis through several generations and also in producing mental instability or even idiocy in the children when the parents are addicted to drinking.

Some authorities have laid stress on the intoxicated state of the father at the time of conception, reinforced in most cases by the terror of the mother, but none have been able to show that there is the slightest relation between the state of either parent at the time of conception and the production of idiocy. If it were so, one would expect that more Idiot or defective children would be born in Scotland about October, i.e., nine months after the New Year, when the lower classes in whole villages get drunk more than at any other period of the year. This no one has been able to prove.

BEACH and SHUTTLEWORTH¹ examined 2400 cases of congenital deficiency with known histories and found that Alcoholism accounted for 16 %, whilst KIND found 11 % in 923 cases. TREDGOLD found a history of Alcoholism in 46.5 % of 150 cases but was also able to show in most of these a family history of insanity or Neuropathic taint. Hence Alcoholism must be an important factor. C. BERNARD and others have shown the effect of various toxic agents on the embryo in the egg, by injecting a culture of Tubercle and of Alcohol in albumen of the egg.

He found that some agents, at the same doses, have different effects at earlier and later stages of the incubation. When applied early they had a tendency to retard the development and to produce monstrosities, where-as when applied at a later period they, instead of producing abnormal forms, were followed by a much larger number of deaths, in the embryo, the liability of a greater mortality commencing with the first appearance of a nervous system. Hence as Alcoholism can so modify the Physical structure, it can still more readily cause the more finer changes in the brain which are sufficient to cause mental defects.

(2). IRELAND², on the other hand, does not believe Alcoholism, especially as a sole factor, to be so important in the production of idiocy as has been made out.

The difficulty that makes the inquiries into the etiology of idiocy so perplexing, is that 'given' causes seldom, if ever, occur alone. There may be both hereditary Tubercle and drunkenness; there may be tubercle in one parent and drunkenness in the other, and all the influences that the latter usually brings in its train.

(5) *Syphilis*.—STILL³ in an analysis of 350 cases of mental deficiency, found 13 with undoubted Congenital Syphilis, and 4 others of syphilitic parents. Hence in this group, Syphilis is a possible factor in 6%. The congenital defect in these was not always of the same type, and though the majority were 'Genetous,' 2 were Mongols, 1 paralytic and one microcephalic.

In some cases, Syphilis is a direct influence, acting on the embryo in the same way as the toxic substance alcohol, at some period of the parental development: in others it is indirect, not producing any specific syphilitic disease in the child, nor in its brain, but acting by impairing the mother's power of reproduction.

(6) *Asphyxia*.—It seems more than probable that asphyxia at birth can produce mental deficiency, and probably by the production of hæmorrhage which damages the brain substance. The type of mental deficiency produced by asphyxia is generally, as one would expect, paralytic, and in a large number of such cases of "spastic paralysis" a history of asphyxia is obtained. Even without excessive asphyxia, it seems more than probable that the non-aëration of the blood produced by the asphyxia will cause toxins to act on the cells of the brain and so affecting their function produce mental deficiency.

(7) *Instrumental Labour*.—The cause discussed in the preceding paragraph is closely connected with another possible factor at the time of birth viz, "instrumental labour." Cretinism, Mongolism, Hydrocephalic idiocy and amaurotic family idiocy certainly cannot be connected with

this factor, but in those paralytic cases, and probably in the microcephalic and some of the genetous cases, this might conceivably be the cause.

STILL (4) investigated 136 of such cases and found 28 or no less than 20.5 per cent were instrumental labours (21 out of 28 genetous, 6 of the spastic, 1 microcephalic, 1 eclamptic and 1 epileptic).

Among the well-to-do classes of the community the proportion of cases of instrumental delivery of children of normal intellect would probably be higher, and hence in comparing idiots with normal children it is essential to compare children of the same social standing.

At the same time it must not be forgotten that the labours which require the use of instruments are usually "difficult" and generally associated with some degree of asphyxia, which latter may possibly have more to do with the resulting deficiency than the actual use of the instruments.

(8) *Place in Family*.—It is well known that Mongolian idiots are usually born when the mother is approaching the end of the child-bearing period and consequently are generally the last child of the family, but another remarkable fact is that in other forms of deficiency it is the firstborn that is more often affected. STILL found 80 firstborns out of 177 consecutive cases of imbecility, and attributes this in some degree to the greater frequency of difficult labour and asphyxia among the firstborns, but probably in a greater measure to the fact that in these the reproductive function has oftentimes not become fully and properly established, exactly opposite to the Mongolian type, where such function is beginning to fail. It is not that these parents are unhealthy, but that their reproductive function on the one hand may not be fully developed, and on the other hand is commencing to become exhausted. At the same time it stands to reason that in these, any cause which tends to affect the mother's general vigour and health will increase the likelihood of imperfective reproduction.

(9) *Relative age of Parents*.—It has been suggested that in those cases where the father is much older than the mother, the child is more likely to turn out mentally and physically weak. Certainly this is quite possible, but although I have no actual statistics on the point, I am inclined to think it has very slight, if any, effect.

(10) *Fright to the Mother*.—Maternal Impressions during pregnancy have frequently been assigned as a cause of idiocy. In some of these cases other factors have certainly helped, but there are now too many cases on record where fright has been the only

apparent cause to disregard this altogether. The anxiety of Illegitimacy has also been suggested as a possible cause, and some authorities have attempted to show that the percentage of Mentally weak children is greater among those born out of wedlock than among those of the whole population. But as bastard children more often come on the rates and are thus recognised, and as the mothers of these children are often mentally weak themselves and consequently the more easily betrayed, one should not lay too great stress on this.

Prognosis.—This must be considered from two points of view: (1) Prognosis regarding the mental condition, and (2) Prognosis regarding life.

1. *Prognosis regarding the mental condition.*—Will the child grow out of his backwardness? is the question so often asked the medical adviser by the parent, and there is no question so difficult to answer tactfully and satisfactorily. The fond mother is probably trying to persuade herself against the evidence of her own senses that the child is only backward and is not, as may be obvious to everyone else, an idiot or an imbecile. The answer given will oftentimes ruin the cherished hopes of the parents, and hence the safe line to take is to cause them as little distress as possible. It is better never to use the words "Idiot" or "Imbecile," but to call the child "Mentally Deficient," and then to answer the many questions such as "Will he walk?", "Will he talk?", "Will he be capable of earning his own living?", judging each case on its individual merits.

Naturally the prognosis is much worse in those idiots who take no note of their surroundings than in those who take some interest in toys and pictures, although the latter may do so in a manner quite different to normal children. Certain generalisations may be made.

Excluding Cretins, it is generally the case that the child whose deficiency is noticed during the first three years of life will be quite incapable of earning his own living.

The large majority of children, however defective, will acquire the function of speech sooner or later. Most will be able to walk or at least crawl, though this may be postponed for several years, and the greater number can be taught to be clean in their habits, unless of course there is some paralysis affecting the nervous centres controlling the bladder and the rectum.

DR. CALDECOTT examined 442 imbeciles and found that only 19.6 per cent. failed to acquire the function of speech to some degree, and that only 4.06 per cent. failed to walk alone. 14 of these could walk with assistance and only four failed to walk at all.

(2) *Prognosis regarding life.*—TREDGAD gives the following analysis of the causes of death in cases of Amentia:—

	Males.	Females.	Total.
Pulmonary Tuberculosis ..	199	106	305
General ..	37	17	54
Meningeal ..	10	1	11
Abdominal ..	9	8	17
Osseous ..	6	3	9
Totals. ..	261	135	396

Hence it is clearly seen that the large majority succumb to PHTHISIS. SHUTTLEWORTH has shown the average mortality among these children to be about nine times as great as among normal children, and that the two chief diseases which carry off the children, next to Phthisis, are epilepsy and pneumonia respectively.

Most of the Mongolian variety die of Tubercle during the first six years of life, though I now have a case of undoubted Mongolism living at the age of 16 years. Though Mentally Defectives may occasionally live until after sixty, the greatest number die before the age of 25.

References:—

- (1) Archives of Neurology, Vol ii, p. 325.
- (2) Mental Affections of Children. (IRELAND).
- (3) Common Disorders and Diseases of Children (STILL), page 519.
- (4) " " " " " 521

*** DYSPNŒA—A CLINICAL STUDY.**

BY

G. RAMAN PILLAI, M. B., CH. B. (EDIN.)

The competent Surgeon of to-day wins the good name of the public by his somewhat dramatic demonstration of "radical" cures of diseases that the patient physician has been trying to dissolve out of the system by means of mixtures and the like. He shells out, in many cases, the entire diseased tissue out of the otherwise normal body, and gives his client the extreme relief of having delivered him from a horrible monster that was within his very flesh, and would not let him live long or in peace. Dramatic cures are a rarity in the province of the physician so far as the more serious diseases are concerned. What name he wins is more by the instant relief he procures to some of the urgent symptoms of his patients than by his most careful and prolonged patience, however commendable. It too often happens that a careful physician is discredited, at least for the time being, by a quack's entry into the scene

* Specially contributed to *The Antiseptic*.

of his labours and his administration of some potent medication that results in instant relief for some of the urgent symptoms, that in the opinion of the physician required but gradual interference for prolonged benefit. In a word, therefore, symptomatic medication has come to be an instrument with which a physician earns a reputation. Symptomatic treatment is part of scientific medicine, and it rarely comes to grief if conducted by those who look not on the immediate symptoms alone, but also beyond them. A brisk diarrhoea, for example, in some cases, may be completely arrested by a certain pill; but in other cases the bowels may be so bound down that the diarrhoea has become replaced by its opposite. And if the diarrhoea happens to have been an eliminative one (*e.g.*, in Chronic Bright), its sudden arrest will only bring on fresh trouble. The "disease" Asthma that we now treat symptomatically with sedatives and antispasmodics, is, strictly speaking, only a symptom. The real nature of this complaint is a reflex from one of the ramifications of the vagus or other nerve. Still we go on fighting the symptom whenever it declares itself, and content ourselves if we tide the patient over the distressing crisis.

While on the one hand we must concentrate our attention on the most urgent symptoms and relieve our patient's immediate distress, and avert any calamity to a vital organ, even before we have had time to consider at length the diagnosis of the ultimate disease of which those symptoms are a manifestation, we must not, on the other hand, entirely neglect to institute a rapid inquiry into the causation of the condition before us.

I therefore propose to discuss certain important symptoms of disease with the object of refreshing our memories on those subjects, rather than with any pretension of saying anything new. I begin with Dyspnoea, and shall endeavour to discuss, very briefly, its causation and diagnosis, and indicate the lines of treatment in some of the more urgent cases.

The function of Respiration has for its chief object the removal of the CO_2 from, and the supply of oxygen to, the various tissue cells of the body. The CO_2 of tissue metabolism is conveyed by the red corpuscles and the plasma of the blood current to the alveolar capillaries in the lungs where the usual unimpeded breathing enables it to be replaced by oxygen which is conveyed by the hæmoglobin to the remote tissue cells. The main fact we have to bear in mind is that the normal respiratory rhythm (14 to 16 per minute in the adult, at rest), and force, are so adjusted as to secure for the body at rest the oxidation necessary for its cells. This balance of adjustment

may be disturbed in various ways, which will be made clearer if we review the several steps in the oxidation process. Pulmonary respiration is only a means to obtain tissue respiration. The demand for oxidation remaining the same, any break-down of one or more links in the chain of events in this oxidation process would bring on a disturbance of the normal state of affairs—either the tissues would remain unoxidised (which Nature tries to avoid, as we shall see), or the act of breathing would have to be made to compensate for the defect by increased frequency and force. One form of dyspnoea would thus result from defective oxidation. Now, how can this oxidation be interfered with?

1. If the products of cell activity accumulate in abnormal quantity in the vicinity of the cells themselves or in their surrounding fluid, oxidation can go on satisfactorily only when a larger quantity of oxygen is imported into the cells by an exaggeration of the acts of inspiration and expiration. Many more of the hæmoglobin carriers are in this way pressed into service than would otherwise have been the case, for each inspiration. The mechanism of production of such a dyspnoea is partly an automatic one. An excess of CO_2 (and other bodies) in the blood acts as a direct stimulant to the respiratory centre.

2. The same thing happens if these products accumulate in the blood because of the failure of a sluggish blood current to transport them to the place of their removal. *Uncompensated cardiac disease* would thus produce a serious form of dyspnoea. Besides the general and visceral circulatory stasis thus induced, the pulmonary engorgement itself aggravates this dyspnoea. Or, the heart may be embarrassed in its action by pressure upon it of a dilated stomach, ascites, tumours, etc. Cyanosis is superadded to the severer forms of cardiac dyspnoea.

3. If the blood is incapable of carrying away all the CO_2 resulting from the cell changes, and of supplying the necessary O_2 for complete oxidation, the same compensatory mechanism has to be requisitioned, as in the severe *anæmias* where the total quantity of hæmoglobin employed in the function of the oxidation is reduced.

4. Or, the failure may be on the part of the lungs and the air-passages. Alveolar ventilation is interfered with in many ways:—

(a) The alveolar walls may be rendered impermeable by turgescence (pneumonia first stage), or atrophy, or a breaking down of the inter-alveolar septa (emphysema).

(b) The alveolar spaces may be occupied by inflammatory exudate (pneumonia, bronchitis), or become obliterated (collapse of lung, phthisis).

(c) The bronchioles may become temporarily (asthma) or permanently, obstructed.

(d) The larger bronchi and the trachea may be pressed upon by growths in the mediastinum.

(e) The larynx may be the seat of obstruction—tumours, oedema of the glottis, paralysis, foreign bodies.

(f) Pharyngeal swellings like very large tonsils, the tongue falling back.

(g) The vitiated air of a closed space may, if inhaled, produce some dyspnoea.

(h) Paralysis of the respiratory muscles (affections of the cervical cord and of the phrenics) and embarrassed action of the diaphragm (abdominal tumours) are other causes.

We thus see that so long as the road is clear for the CO_2 of the tissue cells to find its exit into the air, and the O_2 of the atmosphere to reach its destination at the cells, this form of dyspnoea cannot be induced.

5. Like CO_2 , other toxic bodies (mostly of an acid nature) are known to cause dyspnoea by exciting the respiratory centre and rendering the blood less alkaline. Acetone and Oxybutyric acid associated with the dyspnoea of diabetes, the lactic acid with that of cardiac origin, and the toxins of uræmia and the fevers—are examples.

6. Dyspnoea of nervous origin—coma, and hysteria. Whatever form of dyspnoea we have to deal with, there is, of course, always an excessive stimulation of the respiratory centre. It is difficult to decide in every case whether this stimulation is the result of a toxic cause acting directly on the centre, or a vagal or other reflex, or of both. In either case, we have to find out the source of the toxin or the reflex irritation.

Points that may help in diagnosis:—When confronted with a case presenting urgent symptoms of dyspnoea, the physician enquires very briefly about its *history*. He then examines its nature on *inspection*. The next step consists in a careful *examination* of the air-passages and *the chest*. The *urine* then may require testing for sugar and albumen (also urea estimation). If anæmic, the *blood* may have to be examined.

From the *history*, some information may be gathered. Previous glycosuria, source of renal irritation, serious hæmorrhage, hysteria, cardiac or pulmonary trouble, etc., may direct us to the real cause.

Slight dyspnoea on moderate exertion may arise in chronic Bright, emphysema, early pulmonary tuberculosis, latent pleurisies, anæmias, debility, obesity and some cardiac lesions.

Persistent dyspnoea indicates severer grades of the above conditions or stenosis of the air passages, or some profound toxæmia like uræmia and acetonemia.

If it comes on in severe paroxysms, think of croup, bronchial asthma, glottic spasms, (uræmia and cardiac incompensation).

On *inspecting* the character of the breathing, we distinguish:—

The sighing respirations or "*air-hunger*" of diabetic coma—infrequent, slow, deep, with a sweetish odour of the breath.

The *orthopnoea* of a failing heart—the patient having to sit up in semi-recumbency. Apical pulsation and jugular pulsation may confirm our suspicions.

The *snoring* respiration of coma and pharyngeal obstruction.

The laryngeal *stridor* with the vertical movements of the larynx on respiration.

Croup—predominantly inspiratory and paroxysmal.

Bronchial asthma—expiratory, and paroxysmal.

The dyspnoea with suppressed breathing and deficient chest expansion—pleurisy (dry), pneumonia.

The dyspnoea with an enlarged chest tending to remain in the inspiratory phase—emphysema.

That, accompanying cough and expectoration—bronchitis and allied conditions.

True bronchial asthma may, however, be simulated by uræmic dyspnoea and cardiac asthma.

Very urgent dyspnoea, with cyanosis, some collapse, sweating, severe pain, lividity and a weak pulse may suddenly come on in some cases of pneumothorax.

Further careful investigation of the symptoms and physical signs of the thoracic organs will be required for corroborative evidence of our suspicions. Rarer forms of dyspnoea may be caused by cardiac and arterial degeneration, coronary obstruction, etc.

As regards the treatment of the more serious forms of dyspnoea, we may make a few brief notes.

Oedema of the glottis—emetics, ice applications, scarification of the epiglottis (after cocaineising) if severe, tracheotomy.

Foreign bodies in the larynx or trachea have to be extracted by laryngotomy.

A severe case of *pneumothorax*—morphia for the pain, cardiac stimulation; paracentesis should be done if there is great distension with extreme suffering; any pus present must be opened into and drained; if

clear fluid (on exploration), aspirate; in other cases (milder forms), and especially in phthisical cases, leave it alone.

Bronchial Asthma.—The nitrites; morphia; trinitrin & sodium iodide; sprays with cocaine atropine and sodium nitrite; adrenaline; Lobelia; Grindelia; Hyoscine; or emetic of Vinum Ipecac in children. These drugs act best if accompanied by a purgative.

In *Pneumonia*—and in the febrile states, the breathlessness and other symptoms may be alleviated by diluting and neutralising the toxins that excite the centre, by means of alkaline drinks that help to eliminate them. Also, stimulate the respiratory centre by nux vomica or strychnine, atropine (where there is no tendency to delirium), counter-irritation to the chest, stimulation of the heart. Bleeding, dry-cupping, and cold-sponging.

Cardiac Dyspnoea.—Stimulate heart after diminishing the volume of blood in the venous side of the circulation, by catharsis or venesection (in the robust—8—20 $\frac{3}{4}$ of blood). Strychnine, ether, brandy, digitalis, strophanthus. Amyl Nitrite if there is pulmonary stasis (accentuated pulmonary second sound, etc.).

Of the toxic forms of dyspnoea that of fevers has been mentioned.

Diabetic Dyspnoea.—The comatose condition is treated by the free use of alkalis (Soda Bicarb. 3 iv to 3 i or even more in 24 hours), catharsis, intravenous injection of saline, or alkaline fluid (3 60—3 80), oxygen inhalation. Stimulate heart.

Uræmic Dyspnoea.—Treat uræmia. Blood-letting (10 to 20 ounces in the robust); intravenous saline; ice-bags to nape of neck; amyl nitrite; chloroform; chloral; purging; diaphoresis by pilocarpine and the wet-pack; dry cupping over the loins; lumbar puncture; (renal decapsulation!). Urethane as a sedative (gr. 30-doses). Oxygen inhalation. Cardiac stimulants. Treat associated dropsies, etc.

Our Contemporaries.

MEDICINE.

Faintings and Collapse in Crowds—Causes, Signs, Symptoms, and Treatment.

By

JAMES CAUTLIE, M.B., F.R.C.S. (ENG.)

Surgeon, Seamen's Hospital, &c.

Accidents and sudden attacks of illness in the street are every-day occurrences. They are attended to, as a rule, by friends or bystanders

who may, or may not, have had the advantage of a first-aid training. In great crowds in most of our large towns, and especially in London, the skilled bearers of the St. John's Ambulance Brigade patrol the area of the crowd, be it at gatherings round separate platforms in the park, or for the entire length of processions extending many miles. Excluding the surgical conditions, fractures, sprains, dislocations, and injuries to the brain, the most common ailments encountered in street ambulance work are "epilepsy" and "faints." As the rule, the epileptic has the good sense to avoid crowds, but when a person is seen to have a fit in the street it is almost invariably epileptic in its nature.

By far the most common condition requiring treatment, however, where crowds assemble and are packed in dense masses, or in rows along a pavement where they are being held back and consequently squeezed and crushed, is that of "fainting." The "faint" one meets with in street ambulance work is not usually of the same character as the "faint" one sees in a close-crowded room, or in church on a hot day in summer. The "close room" faints are due to (1) insufficiency of oxygen, (2) an excess of carbonic acid, (3) a combination of the two, or (4) to tightness of "best" or "Sunday" feminine clothing causing a distended stomach to press upon the heart; but the "street faint" met with in packed masses of people differs from these in cause, and in signs and symptoms.

There are several points to consider in order to understand aright the conditions attendant upon the presence of persons who make up a crowd during an event of great public or national importance. The multitude of persons who assemble along the route of, it may be, a jubilee, coronation or funeral procession, the visit of some foreign sovereign, or for the many and varied reasons the public collect in masses, come together under circumstances calculated to cause exhaustion from several causes. Some have travelled all night by train to reach the gathering at an early hour; some get up at an early hour after but a few hours' sleep, for the same reason; others, afraid of being late, start without any food, or with but a hastily snatched meal of a dyspeptic nature, and in a crowded tube, or after a long early morning walk reach their destination. Then comes the long wait and standing still, hour after hour, on the pavement. By and by the crowd increases, the pressure becomes greater and yet more intense, until movement is wholly impeded, and even the raising of the hands becomes well-nigh impossible. The climax comes with the passage of the actual procession, when to the physical exhaustion is superadded the excitement of the moment. Long before this, however, people have begun to drop out

of the crowd owing to "feeling bad." In these early stages, as well as in the later, fear of being in the crowd plays a prominent part in causing people to seek an escape from the assembling masses. When they reach an open space it will be seen that they are trembling, and if offered a glass of water it will be seen that their hands shake so that the glass rattles against the teeth, or they may be quite unable to drink from a glass at all.

On several occasions of the kind I have seen the glass broken by the chattering teeth during the effort to drink. Nothing will induce those terror-stricken folk to venture amongst the crowd again, and it may be hours, or days, before they recover their normal condition. When exposure to crowding is more prolonged there are various causes present which contribute to produce the so-called "street faint."

(1) *Standing*.—The act of standing still for hours together is one of the most trying ordeals short of actual torture any human being can endure. To middle-aged women inclined to stoutness long standing is most injurious, but people of any age find the ordeal severe. The circulation fails, especially if there is an accumulation of fat round the heart or if the heart muscle is weakened by want of exercise or by fatty degeneration. From the crowd as the day advances these weakly persons find their way out, usually with assistance, when it will be found they fall or want to lie down; the pulse is small, feeble, often fluttering or scarcely perceptible. The patient presents a dilapidated appearance, the hair dishevelled, the features swollen, the face purplish in hue, the temperature slightly below normal; the arms are thrown almost rather wildly, and there is an expression as of dread of what is to happen.

(2) *Close Air*.—It seems at first sight impossible that the air could become "close" in the street, but any one who has passed through a lane of people from the front to the rear of the crowd can alone appreciate how close the air can become even in the street. The smell, as one passes along a lane made in a crowd that has been standing for four or five hours in the open air, is at times as overpowering and pronounced as in a crowded hall or public building with imperfect ventilation. There are two conditions present, namely, "closeness" from carbonic acid gas and an odour from the organic emanations from the clothing, from the skins and from the lungs of the mass of the people. If the day is hot, the air moist, and no perceptible wind, the carbonic acid gas accumulates as a cloud around the people, and for some few feet about their heads, so that they are enveloped

in a wall of carbonic acid gas. This gas is heavier than air, diffuses slowly, and from the assembled thousands in a confined area, even in the open street, there is poisoning by carbonic acid gas to an extent to cause "faintness" in the true sense. The less robust of the crowd, whether from constitutional defects or from want of food, succumb and present the appearance as if having "fainted in a close room." The face is pale, the colour disappears from the lips, the pulse fails, the patient becomes partly or wholly insensible, and collapses in a heap. The temperature of the body may be lowered by as much as 2° , registering 96.5 only, and the face and neck are covered by a cold perspiration.

(3) *Crushing*.—The crowd may become so dense and packed that proper breathing is impossible owing to the chest being compressed. The arms are squeezed against the sides of the chest so that respiratory movements are impeded and a sufficiency of air cannot be inhaled, nor can the carbonic acid gas be expelled from the lungs where it accumulates from the blood. Soon asphyxia results, the patient's face becoming swollen and congested, the eyes staring, the pupils dilated, the pulse is small, feeble and almost imperceptible. If not relieved the patient becomes insensible, the urine or faeces may be passed involuntarily, and finally the heart may cease to beat.

(4) *Retention of Urine*.—People standing for hours on end in a crowd from which it may be impossible to escape, frequently suffer from the bladder being over full. This painful state occurs more frequently amongst men than amongst women, and more particularly in the case of old men in whom "bladder troubles" are so frequently met with. Women can, moreover, get relief as they stand, but in the case of men this is more inconvenient and difficult. A "veterans" meeting, as in the case of the assembling of the Lucknow veterans at the Albert Hall, brought home to the officers of the St. John's Ambulance Brigade the fact that catheters were a necessary part of the equipment of the Brigade's medicine chests and surgical haversacks.

(5) *Sun-stroke*.—This is an obvious possibility in very hot weather where crowds assemble, and must always be borne in mind by ambulance men. It will be seen that fainting in the street is not so simply explained an ailment as at first sight it might appear to be. Poisoning by carbonic acid gas is a main feature of the condition, whether it be from inhalation of the impure air causing "faintness," or from the chest being compressed, whereby breathing becomes seriously impeded and asphyxia is the result.

The treatment of persons removed in a "fainting" condition from a crowd is fairly obvious; the difficulty often is to get them out of the mass of people; but with a little coaxing and good nature one can do anything with a crowd, especially when they see that it is a sick or injured person that the passage is being asked for. The rule that when the face is flushed the head should be slightly raised, and when the face is pale the head should be kept low, holds good in all the conditions mentioned above. The clothing should be undone from the neck to the waist, including in men the top button of the trousers and the braces in front. A free circulation of air is necessary, and fanning the face helps recovery. The question of the administration of fluids is easily settled; if the patient is unconscious nothing should, of course, be given by the mouth; if, however, the patient is conscious, the sooner fluids are given the better. What to give: Cold water in sips, cold tea, hot tea or coffee, milk cold or warm, or warm beef-tea, may all prove useful and acceptable. But the question of administering a stimulant arises. Ammonia in the form of *sal volatile* is the medicinal stimulant usually supplied in ambulance hampers. It is given in quantities varying from 5 to 30 drops, or more, well diluted with, say, 2 tablespoonful of water. It is not a pleasant medicine to take, and not infrequently results in the patient becoming sick and vomiting—a beneficial result at times, but not the end one has in view when it is given to an exhausted person getting seemingly worse. Alcohol in the form of brandy or whisky should always be carried, but not administered haphazard by ambulance workers. The occasion for alcohol is when everything else fails, and the patient threatens to collapse. Alcohol is then a necessity, and the feelings of the intemperate opponents to alcohol even as a drug must be sacrificed when death seems imminent. A teaspoonful of whisky in a cup of hot tea is an efficacious stimulant readily procurable and speedy in its action. These diffusible stimulants, ammonia, ether, alcohol, &c., possess an advantage over milk, soup, beef-tea, &c., as all of the latter group require to be first digested in the stomach, a process which takes a considerable time, or may not take place at all, owing to the nervous state of the patient impairing digestive action. It is obvious for many reasons why alcohol should not be added to the equipment of every ambulance hamper, haversack, or chest, but the ambulance worker ought to always have an ounce or two in his pocket, or the officer in charge of an ambulance station should have alcohol in some form at his command.

At times people remain for some hours in a state of languor and listlessness after being removed from a crowd; nothing seems to rouse

them, they are not asleep although the eyes may be closed, the pulse recovers after the first few minutes, they speak sensibly and can swallow what is given them but they remain lying quite contentedly, it may be on the ground. This is neither laziness nor exhaustion from want of food, as people in good position are equally afflicted with the poorer folk. It is presumably due to the presence of carbonic acid gas circulating in the blood supply to the nerve centres of the brain, and there is nothing to be done except to tide the patient over the initial stages of faintness and tendency to collapse, and wait until breathing of fresh air gradually allows the carbonic acid gas saturating the blood to escape. At times artificial respiration requires to be performed to bring the patient to, and the choice of the method to be adopted is one for individual experience to select. Sylvester's method held the foremost place for many years, but it is in danger of being supplanted by Schafer's method. A fairly wide practical experience of Schafer's method does not commend itself to me except perhaps for establishing breathing after apparent drowning. Again no ambulance teacher who has seen a woman attempt to restore breathing by Schafer's plan in the case of a big man, can but be impressed with the futility of the measure. Few women have sufficient strength to compress a man's ribs by Schafer's method so as to cause expulsion of the air from the chest, even when trained in the mechanism of the proceeding. In Sylvester's method but little strength is required, and it is easy to train both men and women to perform the movements efficaciously. Many attempts have been made to introduce measures other than Sylvester's, but Sylvester's has stood the test of time, has many recoveries to its credit, and withal it is more easy of universal application than any other yet brought forward.

In the hands of a medical man Schafer's and Howard's methods are excellent, but for application by the general public they present serious difficulties.—*Folia Therapeutica*.

Ankylostomyiasis.

By

GEORGE A. HUNTLEY, M. D.

The delicate ova of the ankylostomum duodenale cannot be easily found in a thick specimen of the feces. Better results will be secured from washed than from direct specimens. Even then the sediment taken

will sometimes be too thick. Some recommend that this be washed with a solution of calcium chloride. I have never tried it, but have got quite satisfactory results by pouring off the clear fluid in the centrifugalizing tube to within an inch of the bottom, stirring the sediment with the remaining clear fluid and examine. If a drop or two of a solution of methyl blue be added to the specimen nearly everything excepting the ova of *ankylostomum duodenale* will be stained, while the ova will be a conspicuous white. After a while the stain will enter the thin shell, but the segments inside the egg will remain colorless.

On microscopical examination it was found that the larvæ had entered the skin through the hair follicles chiefly, though some had entered through the sweat glands. Some larvæ had penetrated deeply into the skin whilst others had their heads in the mouth of the follicle and their tails still outside.

Now comes the interesting question. After penetrating the skin how do these larvæ enter the intestinal tract? LOESS discovered the mode of entrance by experiments on humans, but after this he continued his investigation by experiments on young dogs and cats. Repeating his former experiments on these animals he found again that the larvæ entered the skin through the hair follicles, and by killing the animals at various intervals he was able to follow the journey of the parasites through the various structures. From the hair follicles it was found that the larvæ entered the cutaneous veins and were carried by the blood stream to the heart. From thence they were carried to the lungs, and many made their way up through the trachea down through the œsophagus into the stomach, where after a few days they were found to develop their well armed mouth capsule.

During this novel journey many of the larvæ succumb; some pass into the lymph glands, where they are attached by the phagocytes and destroyed, while others become imbedded in the mucous membrane of the trachea, where they probably die. It is interesting to observe that in the lungs of all the dogs experimented upon minute hemorrhagic spots were discovered, and as some observers have noticed that the death rate from tuberculosis is double in those infected with *ankylostomes* as compared with those not so infected, it is quite possible that an etiological factor may be found in the migration of the larvæ through the lungs, though of course the attending debility and anæmia has probably something to do with it.

The symptoms may be summarized as follows:—

1. Anæmia with its subjective symptoms, such as debility, mental apathy, depression, vertigo. Also hemic bruits. The lowest hemoglobin percentage was 25 and the highest 70 per cent. with an average of about 45 per cent.
2. Œdema of the legs as an initial symptom in two cases, but developing during treatment in three others. There is usually no ascites.
3. Nearly every case showed a slight rise in the evening temperature; some rising as high as 102, while the morning temperature remains normal.
4. Dyspepsia and pain in the epigastrium.
5. Blood in stools with or without tenesmus.
6. Emaciation is usually marked.
7. Marked eosinophilia ranging from 7 to 19 per cent. in the cases examined.
8. Liver and spleen not usually enlarged unless there is *schistosomum japonicum* infection or some other trouble complicating it.
9. The characteristic ova found in stools.—If, however, no ova are found this does not necessarily contraindicate the existence of *ankylostomiasis*. The parasites may have disappeared while the symptoms caused by those parasites may remain. Further, it is quite possible that male worms or females too old to lay eggs may menace a patient long after ova have ceased to be found in the feces. Many higher creatures do not lay eggs during the last third of their existence and it is quite possible that a similar rule applies to this parasite. Dr. C. C. LASS of New Orleans, recently dissected 247 uncin. amer. and found that 18 or 7 per cent. of the adult female worms contained no eggs. This fact may have important clinical bearing upon the subject and may explain why some patients fail to recover from their anæmia even when no ova can be discovered in the feces.
10. Stunted growth and juvenile appearance.—Men of 20 often look like lads of 14. This is especially the case when infection takes place before puberty.

As to *treatment*. You will notice from the cases recorded we have used *aspidium*, *eucalyptus* mixture with chloroform and castor oil, as recommended by SIR PATRICK MANSON, thymol and beta naphthol, and one case was treated with fair doses of all four drugs without result, but this happily is unusual.

I have had bad, even alarming symptoms with two of my cases after treatment with the *eucalyptus* mixture, and I do not now use it with the same confidence I once did.

I have seen no ill results from thymol, and I believe that if the usual precautions of keeping the patient in bed and withholding all oils, fats and alcohol are observed, there is little to fear even from large doses. It is, however, contraindicated in gastritis, dysentery, nephritis and in cardiac disease, nor can it be used with safety in advanced cases of *ankylostomiasis* in which prostration is extreme.

In the administration of thymol too one should be guided by the apparent age of the patient rather than the actual age. A patient of 20

stratification of the epithelium, with which he has to reckon during treatment.

Preliminary Advice.—Instrumental methods, while increasing the possibilities of treatment, are an additional source of danger for the patient. The physician, fully alive to his responsibility, will never carry out the least intra-urethral operation without the preparatory ritual required. His hands must be carefully washed with soap and nail brush. After having made the patient pass water, he will wash out the urethra (*vide infra* "Lavage"), and when it is possible the bladder, with a large quantity of some antiseptic fluid (weak boric acid or permanganate solution). The patient will expel this by immediate micturition. The instruments will, it is fully understood, have been thoroughly sterilized. The danger of infection will by these means be found to be reduced to a minimum. Further, to avoid reflexes, sometimes direful, instrumentation must be performed with gentleness, carefulness, and patience.

On the other hand, as has been said, the complex character of the lesions carries with it the necessity for using the therapeutic methods in combination, joining the benefits of one to the usefulness of the other. The skill of the practitioner is gauged by this readiness. Successfully to accomplish his task, he must leave undone no means of control, and he will make himself completely familiar with the use of the endoscope. This method of investigation is carried out by means of the urethroscope. The constantly recurring opportunity for the use of this instrument throughout the whole period of treatment induces us to speak about it forthwith.

Technique of Urethroscopy.—Among the forms in use, each is recommended for some particular quality, but we will point out the principles of a working urethroscope, well planned and well made. It is composed essentially of two parts:—(1) A straight tube which is pushed into the urethra by help of a mandrel. (2) An electric lamp, in or outside the tube, according to the model. This is the delicate part of the apparatus.

Before all, it is requisite to test the lamp—an easy matter, because its connecting supports are independent of the tube. With the help of a good rheostat, which is worked very slowly, the filament is brought to incandescence. The light, at first of a dull red and then of a brighter red, gradually gets paler relatively to the increase of current. As soon as the light is white it must be stopped for fear of burning the lamp. When the current is cut off, the rheostat is kept at the point which allows white light to be obtained. The lamp, always kept away from the tube, is placed within reach of the hand, on a sterilized tray. The

ordinary precautions are then carried out as regards the patient (lavage of the glans and of the urethra after micturition; injection into the bladder of an antiseptic liquid for expulsion after the examination). Then the tube, well greased with sterile oil, is introduced fitted with its mandrel, which is drawn out immediately afterwards. Finally, the lamp is placed in position and the current turned on. Thanks to the trial beforehand, the greatest amount of illumination suitable is obtained at once.

Once the tube is introduced, by means of a mechanism, which is not described here, and the illumination obtained, the tube is lighted up, and at its end is seen the mucous membrane gathered together like a purse. By advancing and withdrawing the urethroscope the different parts of the mucous membrane are brought into the field. This is easily done in the penile portion of the urethra, but is dangerous in the posterior part, which nearly always bleeds. In order to remove the blood and exudations and to permit the ulcers to be touched, use is made of swabs formed of a very fine rod ending in an arming of wool. The swabs are sterilized in the autoclave, and only used once.

Such are the principles governing the use of the endoscope. It is obvious that the method should be fruitful in results, because it permits of visual examination and direct application, but to wish to put it in the place of other methods, apparently less attractive, would be to discredit it. It complements and does not suppress these.

These considerations as a whole being thoroughly established, we can now take in hand the study of the treatment of the particular varieties of gonorrhœa.

II.—THE PREDOMINANCE OF EPITHELIAL LESIONS.

(A) *Superficial Inflammation without Keratinization.*—The discharge is thick and purulent; the mucous membrane, through the urethroscope, is seen to be œdematous, red, and with or without ulcers. This condition corresponds to an inflammation in a comparatively early stage and is amenable to lavage.

How Lavage ought to be carried out.—After having passed water, the patient lies down on the table. The practitioner, with hands and nails carefully washed and brushed, first proceeds to clean the glans, and then the meatus, by means of absorbent-wool swabs soaked in a hot, but non-irritating, antiseptic solution (*e.g.*, oxycyanide of mercury, 0.20 g. to the litre). Then he inserts the nozzle of the lavage apparatus. This may be either an irrigator or a syringe, but it must be remembered that the anterior urethra only should be washed out if the lesions are not situated beyond its

limits, and that in every case it must be the first to be washed out. A very moderate degree of force must be used, the nozzle lightly resting against the meatus, which remains gaping open so that the fluid may be able to flow freely out again. Numerous prescriptions for lavage of the urethra have been suggested. In our opinion, the composition of the solution is a matter of less moment than the length of time it remains in contact with the mucous membrane, and the temperature, which preferably should be about that of the body. The end in view is a bath for the mucous membrane, a bath so prolonged that during its course, once the discharge has been swept away, the active element in the irrigating fluid will have time to soak into the affected tissues as far as their recesses. Acting upon this idea, we keep the stream running slowly, and we use very weak solutions in order to avoid caustic effects, and to ensure a mildly astringent action. Among the substances recommended, permanganate of potash (20 cg. to the litre of water) always seems to be the most effective. It produces good results by virtue of its harmlessness in respect to the tissues, and its elective affinity for the gonococcus. For similar reasons we recommend albargin, 30 cg. to the litre.

Lavage with a Short Catheter.—If it is feared that, in spite of the care taken, the limits of the anterior urethra have been passed, and if it is wished to localize precisely its effect in the cul-de-sac of the bulb, that haunting-place partial to infection, it is of very great advantage to make use of a short catheter, the size of which is so designed that for an urethra of average length the eye of the catheter is the cul-de-sac of the bulb when its outer end is at the meatus¹. The calibre is small, so as to avoid any dilatation². We begin by allowing the liquid to flow before introducing the sound even so much as into the meatus; the path for this instrument is gently opened up for it by the fluid. By this simple procedure, applicable to sensitive urethra, there is no possibility of driving infectious germs back into a posterior urethra which has remained healthy.

Lavage of the Posterior Urethra.—When affections of an analogous kind are present in the posterior urethra, these demand similar attention, preceded in every case by a most careful lavage of the anterior urethra: deep lavage is carried out by intermittent jets or a continuous stream.

(1) It is easy to make sure that the end of the sound is in its proper place. Beyond the cul-de-sac of the bulb is normally a narrow channel which is at once appreciated by the hand directing the catheter when this engages therein.

(2). In France, as a rule, we use Duchatelet's sound, which fulfils all the conditions laid down.

Lavage by Intermittent Jets.—With a quiet patient, able to understand what is expected from him, this method is very convenient. As desired, the patient is told to take deep breaths, to avoid all muscular action, and to act just as if he were about to micturate. Thereupon the pressure is increased, and the nozzle is pressed firmly against the meatus. After a momentary hesitation, which it is well to take advantage of in order not to give rise to pain, the hand holding the glans becomes aware of a distinct tremor, due to the rapid passage of the "shower." From 100 to 150 c.c. pass into the bladder. The flow is stopped and the patient empties his bladder. This is repeated about three times. A too prolonged procedure causes congestion of the prostate. Unfortunately, this method of lavage without a catheter is far from being applicable to all cases. Sometimes an acute condition of the prostate or of the bladder resists it. For a while, alternative instillations are used¹. On the other hand, especially among the upper classes, pusillanimous individuals are met with, having exaggerated sensibility, incapable of controlling their fears, and whose reflexes are not to be overcome. Such cases obstinately close their sphincter, and an increase in the pressure only results in the painful distension of the anterior urethra. For such patients the use of continuous lavage is suited.

Continuous Lavage.—Far from entrusting to cocaine the duty of allaying spasm, for this again we use a fine sound of a Duchatelet's pattern, the size of which is a little less than the bladder sound properly so called. While the sound is making its way the patient does not suffer, and the lavage is completed without filling the bladder.

It is a great step in advance to suppress the analgesics, the repeated use of which every day during the long-drawn-out course of the disease is not without danger. Besides, by suppressing the pain, cocaine deprives the operator of the information rendered by the patient by means of his own sensations. (When it is not a question of educating the patient, cocaine remains fully worth the use. The allaying of pain at the early stage quiets the patient, who submits to the rest of the treatment quite willingly.)

(B) *Interstitial Inflammation with Keratinization.*—The discharge contains a very large proportion of keratinized cells. Urethroscopic examination shows from place to place the presence of hard patches deprived of polish, colourless, and leucoplastic. In that case lavage is powerless. There is no room for the hope that by multiplying injections or changing their composition these patches of keratinized epithe-

(1) Nitrate of silver 1 per cent. argyrol 20 per cent.; the latter is not painful.

lium are going to become less and definitely disappear. The success of caustic instillations is variable. It is true that they bring about an abundant desquamation, and break up the leucoplastic surface, but repair in normal fashion has no opportunity, unless the keratinized patch is small enough to have been acted upon throughout its whole depth by the chemical agent. Ionization is what at the present day gives us the most certain results, and to ionization recourse must be had whenever instillations have failed us. For this purpose we avail ourselves of Maringe's method. The apparatus consists of a metal handle, carrying above it a spur, in which is fixed a movable rod. At the side there is the tube by which the liquid is brought. A non-conducting tube is fitted upon the handle and sheaths the metal rod. It is pierced in its whole extent by holes, and its anterior end is olive-shaped for plugging the meatus. Fluids injected under pressure are thus retained, and smooth out the folds of the mucous membrane.

We surround the penis with a layer of absorbent wool, moistened with salt-water, which will act as the indifferent pole by placing in it an aluminium electrode, fixing itself automatically. The ionizator is introduced, and the meatus plugged. The spur is joined up to the active pole. By the tube at the side of the handle we fill the urethra with a solution of chloride of zinc, 1 in 300. Our guide is the sensitiveness of the patient and the indications of the galvanometer. For our source of electricity, we make use of bisulphate of mercury batteries. The current is from 15 to 20 milliamperes, and is passed for from 5 to 10 minutes. We use the positive and reverse the current a few moments before stopping. The application is made every five days. After the second application the morning drop gets clearer, and its composition, which before treatment is made up of polynuclears, keratinized epithelial cells, cocci and rodlets, is ascertained now to be changed to the following:—At first there is intense desquamation of keratinized cells; after the fourth application the microbic flora disappears, and towards the end fibrin is seen to be present. In cases in which the discharge was at the outset microbic, ionization causes the reappearance of the flora by dislodging the cocci from their crypts, and destroys them in the end.

Ionization is contra-indicated in cases accompanied by subacute inflammatory conditions of the mucous membrane, because it brings about a violent recrudescence, the effects of which may prove serious.

III.—PERI-URETHRAL LESIONS.

(A) *Embryonic Infiltrations and Fibrous Degenerations.*—The discharge is not very copious, and is opaline in appearance. Diagnosis is

not made by the help of visual examination, but by means of palpation after the introduction of a bougie or of a metal sound. Embryonic infiltration around the urethra leads on to fibrous degeneration, which itself ends in stricture. Our treatment is dilatation.

Dilatation or Internal Massage.—If dilatation is eminently suitable for re-establishing the calibre of a urethra throttled by rings or by a fibrous band like a muff, it exercises preventive powers during the period of evolution of the causal lesions. At this stage the disease assumes an aspect which, with Otis, we characterize by the term, "relative stricture." The point concerned is a diminution of the dilatability of the canal, in which respect the operation of dilatation is very effective. The dilatation itself carries out a real internal massage of the walls, which are stretched directly at the parts in which they have lost their pliancy; it then sets up circulatory changes by favour of which the infiltration is gradually absorbed.

The use of bougies and sounds is current practice, but the practitioner is tempted too often to reserve their use solely for the treatment of established stricture. We will recall to mind in a few words the passing of the sound. The patient is lying down and the physician stands on the right side. After having washed the urethra and filled the bladder, he takes the penis in his left hand, keeping the prepuce drawn back, and with the right hand brings the instrument covered with sterile oil to the meatus. He then draws the penis over it, inclines it to the side and holding the instrument parallel to the fold of the groin, he allows it to slip down the canal, until the end reaches the entry to the posterior urethra. He then notices a feeling of resistance. When that ceases, without any attempt on his part to overcome it, he brings by a sweeping movement of rotation the sound to the middle line, so as to rest the instrument in front of the pubis. Then he gently raises it, "see-saws" it, and brings it down in the reverse direction between the thighs. The last movement ought not to be made if the least difficulty is encountered in attempting it, because that arises from the fact that the end of the instrument has not been carried far enough at the start. It is necessary to begin again. Three sounds are passed at one sitting. The next sitting takes place three days later, and the number of the sound first to be passed is that of the largest but one passed at the previous time. Bougies are introduced without any difficulty. It is sufficient to draw the penis well forward. They only dilate imperfectly the posterior urethra, but they are suitable to begin with because they are easily tolerated by reason of their pliancy. The dilatations are carried up to No. 25 with bougies, and as far as No. 60 with sounds if the meatus is wide.

It sometimes happens that this port of entry, being inextensible, does not permit the introduction of instruments above a moderate diameter. It then becomes necessary to enlarge the meatus resolutely by snipping it through at the posterior commissure. When the patient refuses to allow this little operation it may be avoided on condition that No. 40 at least can be passed. This size corresponds to the calibre of the dilating instruments which are passed in closed, the arms opening out only when past the meatus.

There are two forms of these last-mentioned instruments, one straight for the anterior urethra, and the other curved for the posterior urethra. The instrument is introduced after the usual precautions, that is to say, as soon as the urethra has been washed out and the bladder filled with antiseptic fluid, the expulsion of which after the operation will provide a double back-flow. The dilator must be carefully lubricated with vaseline, sterile oil, or, still better, with oil containing gomenol. When it is in place, the wheel outside, which controls the arms, is slowly rotated, noting at the same time on the dial the amount of separation registered. As soon as the patient complains of a feeling of stretching it is absolutely necessary to stop rotating the wheel. After a few minutes the discomfort passes off, and rotation is resumed, soon to be stopped again. In this way by degrees the limit is reached beyond which the hand moving the wheel experiences a slight resistance. It is necessary to leave it at that, but at the next sitting two or three degrees will be gained. The instrument is left in place for a few minutes, and the wheel is then turned in the opposite direction in order to be able to withdraw it. During this part of the operation one danger must be avoided, that is catching the mucous membrane between two arms and nipping it. The procedure must be slowly made, at the same time asking the patient as to what he feels, and putting forth no effort. If pain is experienced, and there is a slight hindrance to turning, instead of continuing, the reverse action is made, the branches are opened out a little in order to free any tissue that may have been nipped, and then the dilator is slowly closed completely. When it is taken out, a thin discharge is seen to issue which is secreted by the urethral glands. The dilatations obtained by help of these instruments may be considerable, and by virtue of this they render valuable service. Thus, while through the most yielding meatus No. 60 can be passed, the dilator is able to separate its arms up to a diameter corresponding to No. 90. For this reason, far from limiting its use to the treatment of patients with a narrow meatus, we look upon it as the complement of the sound. The instrument is passed every five days. No. 70 is a large enough size to

employ in the anterior urethra, No. 80 in the posterior urethra. Dilatation, or internal massage, yields the best results; however, it would not be wise to limit the instrumentation to dilators. Bougies and sounds remain indispensable because they allow external massage to be made.

External Massage.—A bougie or sound is passed and kept in the urethra by the left hand, the glans being held firmly between the thumb and index-finger. The right hand seeks for the thickenings, indicating infiltrations or fibrous patches, and makes light pressure upon these with the pulp of the fingers for some minutes, avoiding the rousing of the sensibility of the patients. These applications are made every three days. During the first couple of weeks it is almost the general rule for the morning discharge to become more copious and thicker, but after a certain time has elapsed it grows clearer and gets less in proportion as the thickenings felt on palpation disappear. Complete recovery requires a course of treatment lasting from three to five months, at least, in favourable cases; and it is often necessary to have patience and to forbear. It is always necessary, when superficial inflamed lesions are found to be present, to suspend the use of dilatation and massage, to rely upon lavage, and to wait until the epithelium is in a condition to tolerate the contact of instruments. The same rule applies to a course of treatment by dilators, when superficial foci light up again, which frequently occurs. Control by the urethroscope, and the examination of the secretions, are not only to be carried out at the patient's first visit, but during the whole course of the treatment. To ignore the necessity for a periodical exploration is to condemn the practitioner to blind treatment and to limit his success to chance cures.

(B) *Soft Infiltrations* (polypoid vegetations).—Diagnosis can only be made by the urethroscope. This form of sequela is not frequent, but it is well to take it into account, because the methods previously described are not applicable in such cases. Procedure by direct abrasion is the only method from which to expect a result. By means of the tube of the urethroscope, the small tumour is localised, and it is destroyed by galvanic cautery—in several sittings, if it is sessile and diffuse; in one sitting, when the pedicle is easily isolated and can be caught in the galvanic loop.

IV. — GLANDULAR LESIONS.

We shall consider the glands of the urethra relative to their volume and their distribution, which surrounds placing in the first category the collection of small glands, which surrounds the urethra—Littre's glands, closed follicles; and in the second, the organs having definite individuality—Cowper's glands and the prostate.

Glandular Lesions of the Anterior Urethra projecting from the side of the Canal.—Passage of a bougie conveys the impression of small rings. When lighted up by the urethroscope, the mucous membrane is seen to be raised by one or several whitish projections. Treatment is direct, each pustule is incised by means of Kollman's knife whereupon the pus issues freely. When the small bag of pus presents a firm surface we make use of a sterilised curette, a touch with tincture of iodine on the point of the galvanic cautery, or, again, we wash out with some caustic fluid, (solution of silver nitrate,) using for the purpose long and slender metal tubes, curved at the end, which we fix on to a Pravaz syringe. Cure is, as a rule, very quickly obtained.

Lesions without immediate relations with the Canal (miliary folliculitis), which can be felt on palpation as a patch of hard granulations.—These are small encysted abscesses, equally removed from the surface of the urethra and from the skin. Surgical treatment is not practicable. By combining the effects of ionization and those of massage, it is possible to succeed in causing a remedy to penetrate as far as the level of the diseased points, to soften the tissues, to re-open the excretory ducts, and to express the contents of the abscesses. The ionizing apparatus of which we make use for this purpose has been devised to meet particular objects. It is a rod of zinc or of silver, similar to a sound, so as to be able with the same instrument to use massage. The use of the silver ion produces less active reactions than that of the zinc ion. The secondary effects of the latter can be avoided by passing currents of very low intensity (2 to 4 milliamperes). After washing out with a solution of sulphate of zinc, 5 per 1000, we introduce, without any lubrication, the zinc sound, which we join up to the positive pole. Actually, the passage of the metallic particles is worked from the positive to the negative. Thus it is that the medicine reaches the deep parts of the tissues. After a few minutes we reverse the current in order to prevent the formation of hard and contractile scars. Then we cut off the current and massage with many precautions. During the three or four days following the application the discharge increases; it then gets less, only to reappear after ten days. This relapse does not take place, if care is taken to make the applications at intervals of eight days. For the consequent pain we use high-frequency currents with a long effluve. After five applications we leave off ionization and are content to massage. During this stage we use with advantage the grooved sound, which collects in its grooves the secretions pressed out of the affected glands.

Inflammation of Cowper's Glands.—The extent of the trouble to which this infection gives rise, and its locality which is particularly

accessible to the bistoury, call for surgical treatment, preferably excision.

Prostatitis and Periprostatitis.—We will not stay to describe the instillations which have been known to all for a long time, but will deal with massage of the prostate and electrical methods of treatment.

Massage of the Prostate.—The urethra is washed out and the bladder supplied with fluid. The patient is placed in the dorsal decubitus position with his legs drawn up, or in the knee chest position, or, more simply, he remains upright with the trunk bent forwards. The last position is less tiring for the patient and the operator. The index-finger in a rubber cot is introduced into the rectum and, reaching the gland, explores it and defines its shape. When the lateral grooves, which mark its limits, are effaced, periprostatitis is present, which must be carefully dealt with first because of its painful nature. The tenderness of the region is lessened by means of effleurage, then expression is prudently made use of. The gland is pressed between the fingers of the operator on one side and the pubis on the other; this presents a resisting surface very favourable to the manoeuvre. When the massage is finished, the patient is made to empty his bladder. The liquid is turbid. It gets clear by degrees, sometimes only at the end of several months, but it never becomes perfectly clear. Palpation and microscopical examination show when a cure is obtained.—*The Practitioner.*

Iodine Tincture and Gangrene.

Much has of late been written concerning the virtues of tincture of iodine as a skin antiseptic, both in preparing the cuticle for operation and in cleaning up wounds. The disadvantages of its use are not mentioned, however, to any great extent, so that it is well that attention should be called to two cases in which its employment was followed by gangrene of the skin. Dr. Hinderberg, reports that he had treated two labourers who came to him with wounds of the toes caused by the axe slipping while cutting wood. They were seen within a few moments of the accident, the bleeding wounds being painted freely with tincture of iodine and an aseptic bandage applied. Two days later, on removing the latter, the edges of the wounds were found to be red and inflamed, and in three days after that all the phenomena of gangrene were present. This fortunately was entirely superficial, and under treatment quickly cleared up. The author explains the occurrence of this condition by supposing that the application of the drug to the bleeding wounds allowed of a sufficiently large quantity of it to be absorbed by the gaping vessels in the walls of the wound to induce

gangrene. He therefore advises that in similar cases the edges of the wound be carefully protected by iodoform gauze before swabbing its depths and the neighbouring parts with the drug.—*The Hospital*.

Report of Unusual Cases.

BY

J. H. MCCARTNEY, M. D.

Case No. 1—A male child, five years of age, greatly emaciated, was brought to the out-patients' department, with the following history: Had had measles about three months previous, and for past two or three weeks was troubled with greatly distended abdomen, pain and temperature, with all the symptoms of peritonitis. The umbilicus was protruding and presenting all appearance of going to rupture. We decided there was pus within, but before opening used an exploring needle to determine if this was so. On inserting the needle a mucopurulent material exuded with a markedly fecal odor. We accordingly enlarged the opening, and great quantities of feces were expelled, which greatly relieved the child. That same night it passed five round worms through this opening, and the next day, when he was brought to the dispensary, a round worm was protruding from the opening—making six in all. The child died about one week after. How the worms succeeded in escaping from the intestinal canal I am not prepared to say, as no autopsy was held. It only serves to show that the round worm is not so inoffensive as is generally thought.

Case No. 2—Adult, male, 50 years of age. Incomplete inguinal hernia on right side. Gave following history (as near as you can get such a history from a Chinaman): About one month ago a swelling in left inguinal region became painful, and finally ruptured, through which several round worms were passed. Since then he has been passing small quantities of feces through the opening constantly. It was evidently a strangulated hernia, which ruptured and the worm passed in the ordinary course of events.—*The China Medical Journal*.

OBSTETRICS AND GYNÆCOLOGY.

Myoma of the Uterus Complicating Pregnancy, Labour, and the Puerperium.

By

COMYNS BERKELEY, M.B., B.C., F. R. C. E.—

The percentage of uterine myoma is higher in married than in single women. If the tumour is interstitial or submucous, the chances of fertilization are diminished but the sub-peritoneal variety is no bar to concep-

tion. Nevertheless, the association of myoma with pregnancy is not uncommon. The diagnosis of pregnancy in a myomatous uterus is often difficult, especially when the uterine cavity with its contained ovum is behind the tumour. In place of amenorrhœa there may be irregular bleeding, and softening of the cervix may be absent or badly marked. The appearance of amenorrhœa in a woman with a myomatous uterus is very suspicious, but pregnancy can be diagnosed with certainty only when the foetal heart is detected or the foetus felt.

Only in very few cases of myoma in pregnancy will trouble occur. All the practitioner need do, therefore, is to keep a watchful eye for certain complications. These are abortion, degeneration, pressure, and torsion of the pedicle of the pedunculated sub-peritoneal variety.

The most frequent form of degeneration in a myoma associated with pregnancy is "red necrobiosis" in which the tumour becomes very tender and painful. If in addition there is a marked increase in size or continued rise of temperature, the abdominal cavity must be opened and the tumour enucleated, if possible, or the pedicle severed as the case may be. As a rule it will be found impossible to perform either of these operations, and the uterus will have to be removed by hysterectomy, or the bleeding following an enucleation may be so severe that the removal of the uterus is imperative. If enucleation is successful, it is followed in a large number of cases by abortion or premature labour a day or so after the operation. The writer twice removed a degenerating fibroid from a pregnant uterus. In one case the pregnancy continued safely to term, in the other miscarriage resulted.

Pressure symptoms are due either to the size of the tumour, to the uterus being retroverted and impacted, or to a pedunculated sub-peritoneal tumour slipping down into the pelvis. Dangerous pressure symptoms from mere size are very rare. In cases associated with an impacted retroverted gravid uterus the fibroid may be pushed up and the patient go safely to term. In other cases, when the myoma is low down in the uterus, with its upward growth the tumour may gradually rise, followed by the relief of the pressure symptoms.

Lastly, the practitioner may come across a case in which, from the size and position of the tumour, there must be an insuperable obstruction to delivery at term. Two courses are now open: he can either advise the induction of abortion or the performance of Cæsarean hysterectomy or enucleation when labour ensues. The induction of abortion necessitates the destruction of the foetus, and the operation itself may be most dangerous from difficulty in dilating the cervix and in delivering the ovum afterwards, and if this is safely accomplished the patient still

retains her myoma. By Cæsarean hysterectomy a living child is obtained; the operation is easier than hysterectomy on a non-pregnant woman, and the patient is relieved of her tumour. After enucleation the woman possesses both her child and her uterus. There can be no doubt, therefore, which is the better treatment. Although it may be very tempting in some cases of anticipated obstruction to open the abdomen and endeavour to enucleate the tumour, this should never be done, since the hæmorrhage may be so severe that hysterectomy will be necessary, in which case not only will the woman lose her uterus but also her child.

A patient with a myoma may first come under notice during labour. As a rule no trouble results, labour terminating quite normally. Nevertheless, the myoma will occasionally give rise to hæmorrhage or obstruction. The hæmorrhage may be intra-peritoneal and due to omentum having been torn from the uterus to which it was adherent during contraction, or intra-uterine. In the first case the abdomen must be opened and the bleeding vessel tied; in the second case, the usual treatment for post-partum hæmorrhage will suffice.

A sub mucous myoma may cause obstruction when situated below the presenting part. If polypoid, the stalk should be divided. If sessile and projecting into the cervical canal, the capsule should be incised and the tumour enucleated. If this is impossible, Cæsarean section followed by a myomectomy is the treatment. If a cervical or broad ligament myoma is causing obstruction Cæsarean hysterectomy must be performed.

Obstruction due to a sub-peritoneal myoma depends upon whether it is pedunculated or not. If it is pedunculated, one may be able to push it up above the presenting part and deliver with forceps. A careful watch will then have to be kept on the patient, because degenerative changes in the tumour have been known to follow the necessary manipulations, resulting in the death of the patient. If the tumour is sessile or has a short stalk it will not be possible to push it up, in which case the abdomen must be opened and the case dealt with on its merits.

A primigravida, aged 29, was admitted to the City of London Lying-in Hospital with the history of obstructed labour for many hours. On abdominal examination the child was found to lie transversely, and on vaginal examination the pelvis was entirely occupied by a hard immoveable tumour, leaving a true conjugate of less than 2 inches. The cervix was drawn up so high that it could not be reached. The swelling was a little œdematous and tender. Myoma was diagnosed, and as it

was obviously impossible to push it up, the abdomen was opened by an incision large enough to enable the uterus to be delivered through it. A large pedunculated subperitoneal fibroid growing from the posterior and upper part of the lower uterine segment was detected. The pedicle, which was broad and very short, was clamped, divided, and the tumour removed. Free hæmorrhage ensued and some difficulty was experienced in combating it, but after the application of several mattress sutures it was arrested. The child was turned, uterus replaced, and the abdominal incision closed.

During the night there were a few labour pains. Thirty-nine hours later the patient complained of a desire to defæcate, and the membranes were found protruding at the vulva. Chloroform was at once administered, and the membranes ruptured. The legs were delivered, and the arms, being extended, were drawn across the face and delivered. The head was then found to be extended and was delivered by jaw and shoulder traction. The child was born asphyxiated, but artificial respiration brought her round. Uninterrupted recovery followed.

The writer has performed Cæsarean hysterectomy for myomata at term with equal success.

During the puerperium myomata are usually harmless; rarely they cause trouble from extrusion, infection, or degeneration. A sub-mucous variety may, as the uterus diminishes in size, become polypoid, and eventually be expelled, which is always associated with serious hæmorrhage and often with sepsis. Bland-Sutton reports such a case in a woman aged 40. An oval body, in shape like a foetal head, presented at the os ten days after labour. The tumour was septic and the patient being too ill to be operated upon died 3 days later. If a myoma becomes infected or undergoes degeneration during the puerperium, and its presence is unrecognized, the illness may be attributed to puerperal fever, and the patient allowed to die without operative interference. The writer was asked to see a case of puerperal sepsis. The temperature for 9 or 10 days had been very high, fluctuating between 102° and 104°. There was great abdominal pain, and the abdomen was rigid, the uterus larger than normal, and exquisitely tender over one spot where there seemed to be a slight protuberance. The patient was desperately ill. The writer diagnosed an infected myoma, and on opening the abdomen to perform hysterectomy this came into view. The patient recovered.

Degeneration generally takes the form of red necrobiosis, which may manifest itself so quickly after labour and cause such temperature and

tenderness that the case may be regarded as one of puerperal sepsis. Thus a woman came home from India to be confined in England. She had no trouble during pregnancy or labour, but 3 or 4 days later the temperature began to rise, and she complained of great pain and tenderness. Examination revealed a myoma, and diagnosing red degeneration the writer removed her uterus, after which the temperature fell and recovery quickly ensued. The specimen shewed advanced red necrobiosis.

Whilst, therefore, it is necessary to remember the dangers of myomata in pregnancy, yet it is important to recognize that only rarely does trouble arise, and that the patient should not be interfered with until it does. This treatment markedly differs from that indicated when an ovarian tumour complicates pregnancy; the tumour should be removed at the earliest opportunity.—*The Medical Review*.

On Rupture Of The Uterus.

BY

J. PRESTON MAXWELL, M. B., F. R. C. S.

Rupture of the uterus is one of the serious complications which may at any time meet a practitioner in a country where obstetric practice is as yet in its infancy.

As regards the diagnosis one of the cardinal signs is the stoppage of pains, even though the child has not escaped from the cavity of the uterus.

The uterus cannot be felt as a contracted swelling unless the child has passed either out of the uterus, or, in the case of an incomplete rupture, into the rent still covered by the peritoneum.

Besides this cessation of pains there is prostration of the patient quite out of proportion to any hæmorrhage that can be seen; there is recession of the presenting part in part or completely and a varying amount of hæmorrhage generally bright in colour. There may also be a history of obstructed labour, or of treatment such as would be likely to rupture the uterus, though it is a marvel what some of these women are able to stand in the shape of protracted and obstructed labours.

Treatment is of two kinds—prophylactic and curative. The first named is by far the more important. Barring the rare forms of rupture, such as those taking place in pregnancy, provided that the medical man is called to the patient early enough, he should be able to save his patient from this grave event. An obstructed labour should never be allowed to drag on, but, even at the cost of the child if necessary, terminated quickly. But in China at all events the medical practitioner generally is not called to these cases till the mischief is already done.

First, a clear distinction must be drawn between the cases where the child is yet in the uterus and those where it has passed into the abdominal cavity. Second, the question of the cause of rupture must be taken into account. The presenting part may be within reach, and yet if the obstruction is such as to cause a great difficulty in delivery, and the child is still mostly in uterus, it may still be the better plan to perform abdominal section and remove the child by this route.

Where the child has passed completely into the abdominal cavity, it is best to perform abdominal section and extract this way. Where the child has not passed into the abdominal cavity, and there is no serious obstruction, it is best to extract by the vagina, reducing the size of the child in any way that will make delivery most easy. The delivery of the placenta, even if this has passed into the abdominal cavity, can be accomplished per vaginam by pulling gently on the cord. Of course if the abdomen has been opened for the delivery of the child the placenta is also removed by this route.

Having extracted the child, what is the next step? If the extraction has been by the vagina the writer's advice is as follows: Pass up the hand carefully cleaned as usual and determine the nature of the injury. Replace the bowels and omentum which may have prolapsed into the uterus. This must be done with the greatest gentleness. Pass up a sterilized gauze packing and adjust it as far as possible to the uterine surface of the rent. Give a strong hypodermic injection of ergot and leave the gauze in its place for 24 hours, unless it comes away earlier. Give the patient ergot three times a day and open the bowels freely on the evening of the second day, preferably with a saline purge.

It will be noticed that the writer advises no attempt to be made to extract blood-clot and wash the rent. Probably any attempt to douche the inside of the uterus, involves a considerable risk. Germs may easily be introduced, and the peritoneum is able to deal with a considerable amount of bloodclot, provided it does not become infected.

If the extraction has been by the abdomen, the course to be pursued depends on the condition found. If the woman is septic, and the rupture a serious one, probably the best practice would be to remove the uterus and drain the pelvis from the abdominal wound, placing the patient in Fowler's position as soon as the shock has passed off.

If, however, the operation has to be carried out outside a hospital, the writer would content himself with sponging out, not irrigating, the abdomen, and draining the lower part through the abdominal wound and the adoption of the Fowler position as soon as possible.

In hospital, and if the rupture is in front, it may be sutured, but this must be done accurately if it is to be of real use, and may take a considerable time, and it is to be remembered that one of the chief dangers to the patient is that of shock, and that if, as is likely, the patient is already exhausted by a long labour every minute is of importance.—*The China Medical Journal*.

THERAPEUTICS.

The Local Application of Salicylates.*

BY.

W. ESSEX WYNTER, M. D., B. S., F. R. C. P., F. R. C. S.

Physician to the Middlesex Hospital.

THERE are many indications which show that the local application of soluble salicylate, more particularly the salicylate of methyl, may be more efficacious, especially in local rheumatic disorders, than the more usual form of administration by the mouth.

As an instance there may be cited the case of two youths, now in the Middlesex Hospital, who developed signs of pericarditis while convalescing from an attack of rheumatic polyarthritis, and still taking salicylate of soda, which subsided in three days under the application of salicylate of methyl to the præcordia. In connection with pericarditis, attention should be drawn to a very important indication, which seems to have been hitherto overlooked, as it is not mentioned in the published accounts of the disease. This is loss of abdominal respiratory movement. The association is so constant that on the one hand this sign should always lead to examination of the pericardium, even when there is nothing else to call attention to a morbid state of that sac, and, on the other hand, when such respiratory movement is definitely present doubtful indications of pericarditis may be disregarded. A very striking instance of this connection between loss of abdominal movement and pericarditis is furnished in the case of a friend's butler, who was seized with acute epigastric pain while waiting at dinner. Absence of abdominal movement was so conspicuous that the man was thought to have a perforated gastric ulcer. Other signs being absent, and the pain diminishing with rest in bed, this view was abandoned, and on the following day, feeling much better, the man got up and went out of his own accord. The pain, however, returned with increased severity, and on further examination a pericardial rub was obvious on the third day.

* Abstract of a lecture delivered at the Polyclinic, July 11, 1910.

He was admitted to hospital, and made a good recovery under treatment by salicylate of methyl locally, but for quite a fortnight there was no return of abdominal movement.

Experience of these and other cases shows that important secondary lesions may result from suspended action of the diaphragm, for it is not a definite paralysis. First among them is loss of function of the lower lobes of the lungs, with some degree of collapse, respiration being carried on entirely by the upper lobes, by movements of the front of the chest. Then there is passive dilatation of the stomach, and, to a less extent, of other hollow viscera, and, finally, difficulty in evacuation of the bowel, owing to the embarrassment caused to respiration by sustained contraction of the abdominal muscles when the diaphragm is yielding and ready to mount into the thorax.

These effects are not merely inferred, but are demonstrable by means of the X-ray screen, which shows the diaphragm to be stationary in a raised position, and also enable the upward movement of the kidneys, and even of opaque masses in the intestine, with each inspiration, to be seen.

These remarks, important as their bearing is on the recognition of a serious and obscure disorder, are somewhat of a digression, for the object of mentioning pericarditis is to place it first in the list of disorders satisfactorily treated by the local application of salicylates. The actual plan adopted is to spread an ointment composed of gaultherium oil 3ii. in an ounce of lanoline on lint and apply it continuously over the præcordia. That the medicament is rapidly absorbed is proved by the detection of salicylates in the urine within half an hour. No local irritation is produced, and the only inconvenience results from the rather penetrating odour and the presence of grease on the chest interfering with examination. But these are trifles compared with the benefit accruing, and are easily averted by changing the dressing at the time of examination.

It is hardly necessary to state that this mode of treatment is particularly applicable to rheumatic pericarditis, which is, however, by far the commonest. Rapid subsidence of the inflammation probably exercises an important influence in diminishing the formation of adhesions and extension to the fibrous sac and myocardium, and so limits the later serious consequences of pericarditis. Where effusion occurs, the fluid rapidly disappears under similar local treatment, and it may be of interest to record that in such cases the loss of abdominal respiratory movement, though obvious, is not so complete as in the plastic exudation, and

examination with the X-ray screen shows such effusion clearly, the outlines being distinguished from that of a dilated heart by absence of contractile oscillation.

Further examination of these cases shows that some effusion sometimes exists at the sides and back of the heart where no corresponding signs are afforded by the ordinary means of clinical observation.

As a sequel to ordinary rheumatic polyarthritis, it is not unusual to find pain, with stiffness and even swelling persisting in some one joint after the general fever has subsided. In such cases the local application of salicylates appears often more efficacious than the continued administration by the mouth, and offers the advantage that the curative effect can be thus maintained, without causing the nausea, prostration, and deafness which are liable to attend the former when unduly prolonged.

Many cases of sore throat, faucial injection, and follicular or parenchymatous tonsillitis commonly attributed to rheumatism respond rapidly to a compress extending to the angle of the jaw and composed either of the ointment of gaultherium or of a hot fomentation to which a drachm of the oil has been added.

Perhaps, of all the disorders affected by this application, none shows such marked improvement as erythema nodosum. In the ordinary way the blotches subside spontaneously in the course of two, four, or six weeks, being unaffected by remedies and prolonged by repeated outbreaks.

The local application of methyl salicylate with menthol as an ointment relieves the discomfort at once and induces immediate subsidence within a week, no fresh blotches appearing.

One curious feature, during convalescence, is the tendency of the patches to turn temporarily a blue colour after the patient has been up for a while, as though paralytic dilatation of the capillaries permitted the stasis of venous blood, which subsides in a short while after resuming the horizontal position.

The widest application, however, of this mode of treatment occurs in the various aspects of fibrositis, due to subacute rheumatism affecting nerves, muscles, aponeuroses, and bursæ.

Sciatica, brachial neuritis, facial paralysis, and other varieties of local trouble due to rheumatic changes in nerve sheaths usually respond rapidly to the continuous application of the ointment in severe cases, or its intermittent inunction in mild ones, without much local tenderness.

Muscular rheumatism, stiff neck, pleurodynia, lumbago, and tenosynovitis, mostly in young people, disappear rapidly under the influence of rubbing with one of the liquid preparations.

Bursitis is often a rather puzzling complaint, causing pain and tenderness, which is not referred actually to a joint, though often in close proximity; the neighbourhood of the shoulder, hip, elbow, knee, or tuber ischii being common sites. One of the least known is the middle of the calf, where a large bursa exists between the soleus and gastrocnemius, which is liable to inflammation from over-exertion or exposure to wet and cold.

The useful influence of salicylate is not, however, restricted to rheumatism, for as sodium salicylate internally is of service in acute stages of gout in reducing fever and pain, so the local application of methyl salicylate is one of the best curative agents for acute gout, particularly in one part, such as the foot. A hot fomentation containing a drachm of gaultherium oil, or one of its preparations with menthol, is the best thing to apply.

After enumerating these many conditions in which the local application of salicylates is of service, it only remains to mention the preparations which are available.

The stock remedy is an ointment composed of two drachms of olei gaultherii in an ounce of lanoline, with the addition of fifteen grains of menthol, where an anæsthetic effect is required. Antiphlogistine serves as a useful poultice, ready to hand, and containing sufficient methyl salicylate to be effective.

A mixture of methyl salicylate with menthol made into a thin ointment is sold in collapsible tubes as anesthol, a convenient remedy for inunction in mild affections, especially chilblains.

The liquid preparations are Mesotan, Kasemol, and Betul Oil.

Kasemol a vinegar-like fluid, is one of the least objectionable in regard to odour and absence of grease; Mesotan is similar, but irritating and best used as a liniment with an equal quantity of olive oil. Betul Oil is nearly pure methyl salicylate.—*Folia Therapeutica*.

Insomnia—Animal Extracts in the Treatment of.

Some form of circulatory disturbance is, in general, responsible for the occurrence of insomnia. Hence therapeutic agents which counteract faults in the circulation, whether it be by augmenting or reducing circulatory activity, will prove of marked value in this condition. In cases where the remedies generally used for obtaining such effects cannot be employed or have proven valueless, recourse may be had with advantage, according to the author, to animal preparations, in particular those of the pituitary and thyroid.

Pituitary preparations are especially indicated when the insomnia is accompanied by lowered vascular tension, general weakness and a tendency to chilliness, when it is increased by elevation of the head and diminished by the horizontal or reclining posture, and when the patient is quiet. The dried extract, taken regularly an hour or less before retiring and long enough after the evening meal to insure the completion of digestion, in doses ranging from 0.20 to 0.40 gramme (3 to 6 grains), was found by the author to exert a prompt beneficial effect. Since its action, however, is rather fugacious, the patient's system readily becoming accustomed to the remedy, it is best used intermittently. When it is found that the hypnotic effect is being lost, small doses of Trional or Veronal may be given to sustain it. In cases of irregular insomnia, or of inability to sleep before a certain hour of the night, or of premature awakening after a short period of sleep, the use of pituitary extract when necessary often resulted in the patient's obtaining undisturbed rest for the remainder of the night.

In cases where insomnia is associated with high vascular tension, excitement, cerebral congestion, etc., the author recommends the use of hemoethyroidine, which acts as a sedative in doses of 1 to 4 drams. When the condition of excitement accompanying the insomnia persists during the daytime, the remedy should be repeated at those periods of the day when the excitement returns. Whenever there is evidence that cerebral excitement is a contributing factor in the insomnia, the use of a small amount of bromide in conjunction with the agents above mentioned will greatly favor their action.—*Monthly Cyclopædia & Medical Bulletin.*

Menthol and Eucalyptol Injections in Bronchitis, Etc.

The author has for several years made use of intramuscular injections of Menthol and Eucalyptol in the treatment of various bronchial and pulmonary conditions. He finds them very effective in bronchitis and gangrene of the lung, as well as in many cases of pulmonary tuberculosis. The formula generally used is as follows: Menthol, 10 grammes; eucalyptol, 20 grammes; castor-oil, 100 grammes. Menthol may also be given alone in the proportion of 1 part to 3 parts of castor-oil. At first injections of 2 cubic centimeters (32 minims) of the solution are given three or four times weekly. Later the strength of the preparation is doubled and the number of injections reduced to two a week. The duration of the treatment naturally varies in different cases. In general, a course of injections covering four to eight weeks was found to give excellent results.—*Ibid.*

Euquinine.

Although some fifteen years have elapsed since MESSRS. ZIMMER AND CO., of Frankfort, first prepared this substance, it may, for all practical purposes, still be regarded as a comparatively new quinine substance. It has, however, been before the profession long enough to warrant the statement that Euquinine has established a permanent position among the new preparations. It is a carbonic-ethyl-ester of quinine, and exists in the form of acicular insoluble crystals, and it contains more of the alkaloid than quinine sulphate, but a little less than the hydrochloride. The chief advantage of the preparation is the absence of the bitter taste of ordinary quinine compounds, and this circumstance allows of its easy administration to children. This is of special importance in cases of whooping-cough, wherein, if any drug possesses some specific action, it is quinine. Its bitter taste undoubtedly militates against its general use for children; but many authorities who have employed Euquinine for this disease assert that the attacks are diminished, and that the spasms disappear, in fact, that pertussis is speedily converted into a simple bronchial catarrh. Euquinine should be given in the same doses as quinine sulphate. The Euquinine tablets each contain $7\frac{1}{2}$ grains, and these crumble up quite readily, so that the required dose can be given mixed with chocolate to a child. Symptoms of cinchonism appear to be very rare after Euquinine, and it is therefore valuable as a substitute for the ordinary quinine salts when they cannot be tolerated, because extended clinical experience has shown that Euquinine can be put to all the therapeutic uses of the quinine preparations generally in vogue.—*Folia Therapeutica.*

DERMATOLOGY.

Rice Diet for Skin Affections.

THE close connection between diet and various skin affections, such as urticaria and eczema is a well recognised fact. Certain foods are known to be the direct cause in susceptible people of outbreaks of urticaria; and in the case of eczema, although the causal connection may be not so close, it is undoubtedly affected by diet, and a restricted diet always forms part of a rational treatment. DR. L. D. BULKLEY, of the New York Skin and Cancer Hospital, has conceived the idea of putting such patients on a diet consisting chiefly of rice. He first tried this four years ago on a patient suffering from a severe attack of polymorphous erythema with bullæ. The patient had had two previous attacks, and this one followed a heavy meal with champagne. A

laxative and an alkaline lotion were prescribed, and a diet of boiled rice, bread and butter, and water. The attack subsided in five days, and the patient was surprised at the rapidity of the cure in comparison with the previous attacks. Since then the author has prescribed the diet in all manner of acute and sub-acute affections of the skin, and is much impressed with the good effects. It has shown excellent results in cases of general eczema, which are frequently so obstinate. The author recommends the rigid diet for about five days, and then a light mixed meal may be taken midday, the rice and bread and butter being continued night and morning. The rice must be cooked carefully in a little water (never in milk) and left on the fire uncovered till it becomes more or less dry and flaky.—*The Hospital*.

Cases and Comments.

Constipation in Adults.

BY

W. HALE WHITE, M. D., F. R. C. P.

The first thing to do when confronted with a case of constipation is to make sure that it is not due to some serious intra-abdominal organic disease demanding early surgical interference.

It is quite common for patients with acute intestinal obstruction due to many of its causes as strangulation by a band or hernia for those suffering from acute general peritonitis, or appendicitis, to have had heroic doses of purgatives before arrival in hospital. The purgatives not only do harm but cause delay, thereby increasing the risk if an operation is done.

2. Chronic constipation is due to recurrent slight attacks of appendicitis and such cases may be cured by removal of appendix.

3. Tumour of the large intestine for a very long time causes no other symptom but constipation. Hale White has several times found what was thought to be *ordinary constipation* was due to *slowly growing carcinoma of the large bowel*.

It is very important to come to an early diagnosis in cases of malignant disease of the bowel, for it is only when such cases have been diagnosed early that removal of growth is possible. Usually by the time it is recognised, removal is not possible. If, for some reason or other, operation cannot be performed upon a case of organic obstruction of the bowel due to a chronic cause, it is necessary to keep the motions fluid in order that they may pass the obstruction. For this Pulv. Jalapæ Co. is best, and this may be used with greater benefit if the constipation is due to rectal ulceration.

4. Chronic constipation may be due to various intra-pelvic tumours especially in women, to stricture of the rectum or fissure of anus. In all cases of constipation the rectum should be examined unless the cause is obvious, if necessary with a Sigmoidoscope to discover some of the causes above mentioned. If rectum is full of faeces, organic obstruction is not likely to exist; if ballooned, it may be that there is. The abdomen should always be examined.

It may be due to a blocking of bowels by substances within it; (e.g.) by a gall stone which has ulcerated from the gall-bladder directly into the duodenum or by an accumulation of faeces. These causes ought to be remembered, though small in proportion, as in these cases constipation could only be overcome by mechanical means as scooping out by a spoon passed into the anus under an anæsthetic in the former case.

Constipation is a very frequent symptom of tubercular and other forms of chronic peritonitis. In these cases the simpler the purgative the better, as Castor Oil, Epsom Salts, Confection, or some other preparation of Senna.

It is, again, a symptom of duodenal or gastric ulcer. In these cases large doses of olive oil, say an ounce every 4 or 6 hours, are an excellent aperient, for the oil is bland, unirritating to the stomach and duodenum, a highly nutritious food, and prevent the secretion of free HCl. which is prejudicial to the healing of a gastric or duodenal ulcer.

Sometimes constipation is due to drugs that are being taken—lead, iron, bismuth, opium, morphia, heroin—drinking large quantities of the tea has stood for some time, as it contains much tannin.

With some diseases it is particularly necessary that patients should not strain:—

(1) Patients with severe heart disease or pericarditis, as it may lead to cardiac dilatation, nor those with aneurism. It is necessary to give a mild aperient as Castor Oil, Cascara Sagrada, Senna, &c., in these cases to secure a mild action of the bowels.

(2) Elderly persons with high blood pressure should never strain, for by so doing they may produce cerebral hæmorrhage.

(3) If a cerebral hæmorrhage has actually occurred, it is wise to give a powerful aperient, for dilating the abdominal vessels lowers the blood pressure, and so helps to stop the bleeding into the brain; it is therefore usual to place in the back of the tongue a drop of croton oil well incorporated with butter to prevent its burning the tongue.

(4) Those suffering from chronic uræmia should also keep the bowels well open frequently with saline purgatives and in severe cases with Pulv. Jalapæ*Compound or Elatrium, for we may hope to drain off some of the poison which is the cause of uræmia.

(5) A person suffering from pulmonary hæmorrhage like one afflicted with cerebral hæmorrhage, should, for the same reason, have an aperient at once and Sulphate of Soda is as good as any.

The constipation accompanying chlorosis is often very troublesome and hence it is usual to give aperients with iron, *e. g.*, the mixture may contain Sulphate of Soda and Sulphate of Iron, or a pill containing Cascara Sagrada and Sulphate of Iron may be used.

Patients past middle life with sedentary occupations, who get insufficient exercise and perhaps eat more than they should, are liable to suffer from constipation. Usually this can be overcome by ordering more exercise, less food and alterations of diet and, if necessary, a dinner pill to be taken at night, containing a small dose, say, half or quarter of a grain of Calomel with an equal quantity of dried extract of Euonymin and Extract of Nux Vomica, followed, if necessary, by a saline aperient water early in the morning.

Abridged by
JOHN DEVASIGAMONY.

Penetrating Wound of the Chest Wall with (probably) Injury to the Lung, followed by Recovery.

By

M. GURU RAO.

*1st Class Hospital Assistant, Tarikere, Kadur District,
Mysore Province.*

A Hindu, aged 25 years, had a fall from a Kari Leaf tree, from a height of about 8 or 9 feet. He came down upon a cow, which was grazing below, and his chest struck against one of the horns and a wound was thereby caused. The man is said to have walked a few yards from the place of the accident and then to have fainted. The bleeding from the wound was profuse, and the passers-by immediately wrapped the chest with a wet cloth, and removed him to the dispensary.

Condition of the patient.—He is in a state of shock with small feeble pulse and cold extremities.

He was at once placed on the operation table, with his head low and well covered with blankets; a strychnine injection given; the examination of the wound being deferred till the symptoms of shock lessened.

External appearance of the wound.—A contused wound 2 inches long, slightly gaping, running across the right side of the chest about $\frac{1}{2}$ of an inch above and a little external to the nipple. The wound is slightly bleeding. Air freely passes in and out of the wound with a hissing noise.

Treatment.—The wound was immediately covered with gauze, dipped in perchloride lotion to prevent the entry of air. The skin all round the wound was thoroughly rendered clean first by scrubbing the part with soap and warm water. Then again with pledgets of wool soaked in turpentine and finally washed with perchloride lotion 1 in 1000.

At the time of the fall, the man had a loose coat on, which had been only pierced through by the horn and consequently no foreign body could have entered the wound. However, I carefully examined the wound with my finger, under antiseptic precautions, for a foreign body, a fractured rib, and for the position and nature of the aperture leading into the chest cavity. I could detect none. The aperture might have been too small for being thus detected.

Nature of the wound.—The wound had taken an oblique course between the muscles of the chest and the ribs. It was directed upwards and inwards for a length of about 2 inches. The wound was more spacious at its termination than at its entrance. I wiped the wound well with gauze dipped in perchloride lotion, applied interrupted silk sutures and firmly bandaged the chest. The patient was placed on the injured side. The following mixture was prescribed:—

Tinct. opii. m. 25

Ext. Ergot. Liq. m. 30

Aqua ad. 3i.

Sig. 2 Doses; 1 dose to be given at once and the other at bed time.

The patient complained of much pain and inability to breathe. 3 or 4 hours after this he could not lie down horizontally and had to sit up day and night for the following four days. He coughed up now and then small quantities of frothy blood.

The diet of the patient throughout the illness consisted of milk, chicken broth, conjee, and Brandy in the shape of stimulants, about 6 oz. a day.

The temperature of the patient throughout the illness was about the normal point with the exception of the 4th and 5th days when it was 100° in the evenings. The breathing was rapid, and it was mainly abdominal till the absorption of blood in the plural cavity.

The bowels were regulated either by the administration of an aperient or by an enema.

2nd day.—The dressing had been soiled from the oozing of blood from the wound and consequently it had to be renewed.

Physical examination of the lung:—On percussion, the whole of the posterior surface of the right lung elicited a dull sound. The front of the lung could not be percussed on account of the extreme pain the patient complained of. On auscultation the breath sounds were inaudible. Evidently there had been effusion of blood into the plural cavity (Hæmothorax).

The difficult breathing and inability to lie down horizontally were strong indications for drawing the blood out of the plural cavity by reopening and enlarging the wound and introducing a drainage tube. On the other hand pressure of blood in the plural cavity was a natural means of arrest of hæmorrhage from a wound of the lung. Further, the blood in the plural cavity is liable to speedy coagulation and absorption without setting up the least irritation of the plura. On this principle I allowed the patient to suffer his sitting posture for some time longer, he however, being carefully watched.

The following mixtures were ordered:—

R.—Liq. Strychnine m. v
Tinct. Digitalis m. x
Spts. Ammon. Arom. m. xx
Aqua oz. i.

every 6 hours, and

Tinct. opii m. xxv
Aqua M P. oz. i.

Twice a day when the pain is excessive.

3rd and 4th days.—The patient almost in the same state; the same treatment was continued.

5th day.—The patient now coughed up not frothy blood but a dirty, rusty coloured mass. I put on ½ a dozen small blisters on the posterior surface of the affected lung and ordered the following mixture:—

R.—Pot. Iodid. gr. v
Spts. Ammon. Arom. m. xv
Tinct Cinch. Co. m. x
Aqua oz. i.

(Continued till the patient was discharged).

The difficult breathing which had been slightly better this day began to improve rapidly and the patient could now lie down. On the following day, the lung slightly regained its resonance and by the 9th day it had completely done so. The breath sounds were also audible. Sutures were removed on the 5th day and the wound dressed with perchloride lotion on alternate days. It completely healed by the 14th day and, at the request of the patient, he was discharged.

Remarks.—Wounds of the plura without injury to the lung are possible, considering their anatomical relation, if the wound had been inflicted in the back in the 10th and 11th intercostal spaces, because the plura extends in the back as low as the 12th rib, whereas the lung extends as far as the 10th rib. In other parts of the lung, this occurrence may rarely be possible, if the lung was simply pushed in front of the blunt weapon causing the wound. In this case the latter event may have been possible.

The coughing up of frothy blood, and the extreme shock, subsequently severe pain the patient suffered, are evidences in favour of injury to the lung in whatever degree.

The remarkable rapidity with which blood in the plural cavity was absorbed without the least inflammatory signs of the plura and the lung, as evidenced by the temperature recorded, are all that are noteworthy in this case.

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NOVEMBER, 1910.

The Treatment of Syphilis.



YPHILIS is one of the most interesting diseases known to science. It has existed in the world from very early times, although it is fairly certain that it was brought to India from Europe by VASCO-DA-GAMA'S sailors. It is one of the things which we in this country have had to take along with western civilization. As a result of the contact with the west we are not only getting civilized but also syphilized. At the present time syphilis is as prevalent in India as in any other country. But thanks to the process of syphilization it is not such a virulent disease now as it used to be. We do not intend to go into the vast subject of syphilis in this article. We only want to draw the attention of our readers to some recent developments in the treatment of this universally prevalent disease. Every medical student knows that the one specific drug for the treatment of syphilis is mercury. Another drug—Iodide of Potassium—is also very valuable in the treatment of the later stages of syphilis on account of its property of dissolving newly formed connective tissue before it has become morous. But the drug for the treatment of syphilis is mercury. But there are different methods adopted in the administration of mercury. The drug may be administered by the mouth, or it may be caused to be absorbed by inunction, or it may be injected hypodermically, intra-muscularly, or in some cases even by the intravenous route. But whatever method is adopted, the drug used is mercury. In administration by mouth the favourite preparations used are Hydrargyrum cum Creta or the Liquor Hydrargyrum perchloridum. For the inunction method the grey mercurial ointment is the one generally used. For injections, either the soluble or the insoluble salts are used. Among the soluble salt solutions the following are the most commonly used: (1) a solution of Bichloride of Mercury and Potassium Iodide in sterilised distilled water; (2) a solution of Benzoate of Mercury and Chloride of Sodium in sterilised distilled water; (3) a solution of Cyanide of Mercury in sterilised distilled water. And among the insoluble preparations we have: (1) Purified Mercury in sterilised Lanoline and fluid Vaseline; (2) Calomel in fluid Vaseline; and (3) Basic Salicylate of Mercury in fluid Vaseline.

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The treatment that is generally adopted in many of the watering places in Europe, such as Weisbaden and Aix-la-Chapelle, is the inunction treatment. So far all this is ancient history. But of late other drugs and other methods have been brought forward by different scientific workers as having claims to be called cures for syphilis. We will only deal with two of these new methods here. Dr. Hallopeau, in a communication made to the French Academy of Medicine, expresses the opinion that syphilis is a curable local infection before it becomes a constitutional disease, even after the chancre has made its appearance. And he believes that he has found a means of acting on the chancre and secondarily on the already infected glands, and is thus able to abort the attack of syphilis altogether. And the method of treatment adopted by Dr. Hallopeau is the daily injection, for one month, into the chancre or into the tissues in its immediate neighbourhood, of a solution of 20 cg. of Hectine dissolved in two grammes of distilled water. The chemical name of Hectine is Benzo Sulphone-Paramine—Phenyl-arsinate of Soda. The duration of the treatment is fixed at one month, but we are told that complete definitive recovery is obtained in fifteen or twenty days. That is the abortive treatment of syphilis which comes from France. The next and better known new treatment for syphilis comes from Germany, and is the result of the united labours of the well-known German scientist, Dr. Ehrlich, and of a Japanese doctor named Hata. And the treatment is generally known as the "Ehrlich-Hata" treatment.

Dr. Lindsay Johnson, M.D., F.R.C.S., of London thus describes the treatment in the November number of *The Ophthalmoscope*:

"The Ehrlich-Hata specific is usually designated by the consecutive number of the production "606" and consists of an oxydized diamid of arsenic having the formula $C_{12}H_{12}O_2N_2As_2$. It consists of a yellow powder, which is sold in half gramme tubes sealed in vacuo. * * * A small agate pestle and mortar is necessary. This is first sterilized in boiling water and a tube containing 0.5 grm. of the powder is emptied in. This is rubbed up with 10 cc. of distilled water into a mustard-looking thin emulsion and 0.3 cc. of caustic soda added. The liquid is then tested with litmus, and if still alkaline, drop by drop of acetic acid is added until it is just neutral. Ten cc. of the mixture is then drawn up in a sterilized glass syringe, first heated by plunging into boiling water. A thick fold of skin between the shoulder blades is now drawn up by the finger and thumb, and the needle of the syringe is inserted directly downwards between the cellular tissue over the muscles, and contents slowly pushed in. The entrance hole is

then covered with a pad of lint and plaster, and the operation is complete."

We have thus two new injection treatments for syphilis, and both of them with organic arsenic compounds. After the experiences with atoxyl it is excusable if the profession do not take to injecting Hectine or "606" with any very great enthusiasm. In attempting to cure syphilis it would be very unpleasant if one produced double optic atrophy and total blindness. The treatment may be excellent. But as in politics, so in medicine, the safer policy for the present is to "wait and see."

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Original Articles.

THE TREATMENT OF SURGICAL URÆMIA.*

BY

J. BERNARD DAWSON, M.B., B.S., F.R.C.S.,

Late House Surgeon, the General Hospital, Birmingham.



TREATMENT of any condition, whether surgical or medical, is usually sub-divided into prophylactic and curative.

It is obvious that the prevention of the intervention of uræmia in surgical conditions of the urinary tract consists in the early treatment and removal by operation, or otherwise, of the lesion.

If surgeons were always able to have their own way, such a thing as surgical uræmia should be non-existent, but, unfortunately, the wishes, prejudices and objections of the patient make it impossible for such a happy state of affairs to exist. For instance, it is undoubtedly the soundest and most scientific practice to remove a renal calculus when it has given evidence of its presence. The use of radiography has made the accurate diagnosis of a stone in kidney or ureter a much simpler and more certain thing to-day than formerly. Any man who has experienced, be it ever so slightly, the symptoms of renal calculus, must remain in danger of calculus anuria just so long as the stone remains in his kidney or ureter. It therefore is the duty of every surgeon to urge to the utmost every interference in such cases, although the patient may have been so little inconvenienced by his disease as to be greatly indisposed to undergo any operative procedure.

A similar problem has to be faced by surgeon and patient in cases of prostatic hypertrophy, for this is a condition which may exist to a

* Specially contributed to *The Antiseptic*.

very considerable degree before the patient complains. Operation for the removal of the enlarged gland or the establishment of catheter life is comparatively safe in the earlier stages, but becomes increasingly difficult and dangerous as the prostate increases in size or the patient's general health becomes undermined.

It is therefore an obligation resting upon the shoulders of the medical profession to put clearly before all patients suffering from lesions of the urinary tract the necessity of early surgical interference, for in this way only can prophylaxis of surgical uræmia be attained.

The majority of conditions which would lead to uræmia of surgical origin are of so acute a nature that surgical advice is sought as a matter of urgency; in fact there are only two which may be insidious in their onset, *viz.*—

1. Chronic and Progressive obstruction of the urethra—

- (a) By stricture of urethra,
- (b) By prostatic hypertrophy.

2. Calculus anuria.

This is insidious in its onset in as much as the obstruction of the first ureter is either not recognized or undetected.

Progressive obstruction of the urethra, due to chronic stricture.—This condition is often brought to the surgeon's notice by the intervention of an attack of acute obstruction to the flow of urine. There are, however, cases in which the stricture is small, the flow of urine scanty and the muscular expulsive power of the bladder deficient, so that this viscus is never emptied completely. The amount of residual urine gradually increases in quantity; the lumen of the urethra gets gradually smaller until there is merely a dribbling overflow from a distended bladder.

The results of this are that the bladder wall is hypertrophied, the ureters dilate, the back pressure of the retained urine reaches the kidneys and uræmia gradually supervenes. In addition cystitis, calculus and other bladder troubles may follow from decomposition of the retained urine and possibly also from septic infection. The diagnosis of old standing stricture is not as a rule difficult, and an estimate of the state of affairs can usually be obtained by following the ordinary text book methods. There is, however, one difficulty which may arise, and that is to differentiate between a stricture and an enlarged prostate. Some years ago the writer was consulted by a man who complained of frequency of micturition, both diurnal and nocturnal, of some 3 months' duration. He was about 50 years of age and strongly denied ever having had gonorrhœa or any previous urethral or bladder trouble.

On rectal examination an extensive but soft enlargement of the prostate could be easily felt. A No. 6 catheter was arrested about 6 inches from the meatus. The patient absolutely refused any further attempts at emptying the bladder. The case was regarded as one of prostatic hypertrophy which was interfering with the free flow of urine. Eventually under an anæsthetic, the bladder was evacuated and the urethra carefully examined with an urethroscope. By this means it was clearly shown that there was a tight stricture about 6 inches from the meatus. This was dilated to size No. 14 and kept so subsequently to the operation. Any further interference with the prostate was found unnecessary as the patient was entirely relieved of his symptoms and the prostatic enlargement rapidly subsided, having undoubtedly been of the nature of a chronic inflammation due to, and perpetuated by the urinary obstruction and pressure. Presuming, therefore, that a diagnosis of urethral stricture is made, it remains to discuss what is the best mode of treatment.

1. *Rapid dilatation under anæsthesia.*—This plan of working up by successive instruments from the largest that will pass the stricture to a No. 14 or 15 is on the whole satisfactory, and certainly so when the patient is intolerant of catheterization or liable to have an attack of urethral fever supervening upon the passage of catheters or bougies.

2. *Forcible dilatation by a dilating bougie.*—This plan is a bad one and should be abandoned; it tends to tear the scar tissue surrounding the stricture and so produce more fibrous tissue, so that the final result may be worse than that calling for treatment.

3. *Gradual day by day dilatation without anæsthesia* is a plan which succeeds admirably, and is by far the best if the patient is plucky and persevering.

4. *Internal urethrotomy* may be necessary in certain cases of cartilaginous stricture where the fibrous tissue is resilient and hard, so that dilatation is unsuccessful.

It is outside the province of this paper to discuss the treatment of complete obstruction due to stricture, and even although the condition may be accompanied by that of surgical uræmia it is an acute state of affairs which calls for rapid and decisive action.

Progressive enlargement of the prostate is unfortunately a cause of surgical uræmia even at the present day. Certain men have a great objection to seeking advice about urinary disorders and, because of the frequency of micturition, are led to believe that the "kidneys" are functioning unusually well. In course of time the urethral passage

becomes so greatly occluded that dribbling from a distended bladder again becomes the condition.

It is not easy to treat this condition satisfactorily, because the unsatisfactory character of the general health makes severe operative procedures dangerous. There are surgeons who go so far as to advocate an immediate prostatectomy, but, as it is possible to perform palliative operations which will give the relief necessary in order to remove the uræmic symptoms, it is better to postpone the radical treatment.

It is imperative that the distended bladder should be emptied, but it is still more imperative that this drainage should be effected slowly. Many disastrous results have followed the sudden complete evacuation of a chronically distended bladder, the sudden relief of the back pressure upon the kidneys being followed by a hyperæmia of those organs of sufficient severity to cause complete suppression of urine.

If it is possible to catheterise the bladder by the use of some form of prostatic catheter, the outflow must be so regulated that it is slow and interrupted, so much so that 12 hours or more are spent in evacuating the bladder completely. This allows the renal vascular apparatus to adjust itself to the altered conditions. If catheterisation seems impossible, or is very difficult, help may be obtained by placing the patient in a hot bath after introducing into the rectum a suppository containing $\frac{1}{4}$ grain of Extract of Belladonna and $\frac{1}{4}$ grain of Morphia. If it is still found that evacuation of the bladder cannot be effected per urethram it is necessary to discuss some operative measure. It must be borne in mind that the ultimate object of these palliative procedures is the enucleation of the prostate, and the next step depends upon which plan of prostatectomy is favoured, the perineal or the supra-pubic. The opening whereby the bladder is to be drained may be either a perineal or a supra-pubic one, depending upon which form of prostatectomy is considered. As soon as the bladder has been drained, the judicious use of diuretics and urinary antiseptics should remove the uræmic symptoms and remove any infected condition of the urinary tract. When this has been accomplished the question of prostatectomy may be proceeded with.

Calculous Anuria.—Once a diagnosis of Calculous Anuria has been arrived at, it is obvious that the next step is the removal of the obstructing stone from the pelvis or ureter of the functional kidney. It is by no means easy to decide which kidney is active and which atrophic unless there be a very clear and definite history of old-standing renal trouble on one side which for some time has been quiescent.

Radiography is of great service, for it not only reveals the stone but also its whereabouts. Nevertheless the radiograph may show stones

blocking the pelvis of both kidneys so that but little help may be obtained this way. The Cystoscope is also of use, for it is capable of revealing the absence of a ureter and also of showing the existence of an atrophic ureter, if of some years' standing.

By a careful balance of the evidence which may be elicited from the history and from the present condition of the case it is usually possible to arrive at an accurate conclusion as to which kidney was last functional. It is hardly necessary to say that immediate exploration of this organ is then urgently indicated.

Occasionally one meets patients who absolutely refuse to undergo any operative procedures; in these lamentable instances all that can be done is to adopt the usual measures for relieving the uræmic symptoms when occurring in medical conditions. Active purgation, profuse diaphoresis by means of pilocarpin and steam baths, rectal and intravenous injections of large quantities of normal saline solution, are the lines along which such treatment should be carried out.

THE IMMEDIATE AND REMOTE DANGERS OF CHLOROFORM ADMINISTRATION.*

BY

A. RENDLE SHORT, M.D., B.S., B. SC. (LOND.), F.R.C.S. (ENG.)

*Hon. Surgical Registrar, Bristol Royal Infirmary,
Anæsthetist, Cossham Hospital, and
Demonstrator of Physiology, University of Bristol.*

The selection of the most reliable anæsthetic for surgical purposes is subject to a curious geographical variation. Scotland, the north of England and the Tropics regard chloroform as the most generally useful; in the south of England, America and on the Continent, it is regarded with disfavour if not with dread except in a few special instances, and ether is always chosen as a routine. The principal exceptions, when chloroform would be chosen, are for obstetric work, for patients with dyspnoea or bronchitis, and in operations requiring the use of a Junker's or some similar inhaler. It has perhaps too readily been concluded that in India it would not be possible to give ether on account of the high temperature, but it is only right to say that no difficulty whatever is experienced in this country, when using the ordinary Clover's inhaler, on our hottest days, with a temperature in the operating room well above 80° F.

* Specially contributed to *The Antiseptic*.

What advantage does ether present over chloroform? Large and reliable statistics show that the death-rate on the operating table from ether is about 1 in 10,000, and from chloroform 1 in 1,200. It is replied by the Scotch school that ether claims its victims a few days afterwards from pneumonia; it is admitted that a small percentage do get bronchitis; but the fatal results are in all probability less common than deaths from the condition shortly to be described as "delayed chloroform poisoning."

There are three distinct methods by which chloroform may cause a fatal issue:—

(I) by poisoning of the heart and respiratory centre in the medulla by an overdose;

(II) by vagus inhibition;

(III) by producing fatty degeneration of the viscera and "acidosis."

(I) *Poisoning of the Heart and Respiratory Centre by an overdose.*—This is, or should be, very rare. It can only occur late in the administration, when far too much has been given, and the anaesthetist has neglected such plain signs as dilatation of the pupils, pallor, shallow breathing, and loss of the light reflex. It is, however, very important to realize that when the air-entry is impeded in any way, these symptoms may come on with alarming rapidity. If possible, therefore, avoid any such obstruction; if it is not possible to do so, oxygen should be given with the chloroform.

(II) *Vagus Inhibition.* Open the abdomen of a brainless frog; smartly tap the intestines; in many cases the heart will stop if the medulla is intact, by a reflex *via* the vagus. It is a chief danger of chloroform that before its sedative effects on the central nervous system are thoroughly established, it makes the vagus centre more excitable, and a simple reflex will then suffice to produce instant, and it may be permanent, stoppage of the heart just like that in the frog. This has been repeatedly and abundantly verified by experiment on many species of animals, and most of us have witnessed some of the greatest tragedies that the practice of medicine can ever bring before us, in connection with this very calamity. A patient, it may be an only child, and supposed to be quite healthy, is given chloroform for a trifling operation. Before full anaesthesia is established, there is some slight stimulus, it may be moving the subject on to another table, or the first stroke of the knife, and the pulse suddenly stops, the lips pale, and no efforts will induce the heart to recommence its action.

In other cases, anaesthesia has proceeded further, and the fatal result is induced by dragging on such sensitive structures as the spermatic cord, or the sphincter of the anus. In this instance, the syncope may partly at any rate be ascribed to shock. These sudden alarms are almost unknown with ether, the difference being that the blood pressure is far more depressed by chloroform than by ether.

The prime cause of vagus inhibition, however, is the sudden inhalation of a chloroform vapour more concentrated than 2 per cent. It is only too easy for this to occur if the mask or towel is closely applied to the face or is several layers thick, or if the anaesthetic is not withdrawn during struggling or crying. Under these circumstances a single deep inspiration may draw in a poisonous dose of chloroform, the vagus is stimulated by it, and death takes place instantly.

We must speak first of the *prevention* of this condition, and then of its *treatment*.

Prevention.—England, Europe and America have learned their lesson, Scotland is learning it, and India will follow one day: *never give chloroform unless ether is contra-indicated*. When, however, chloroform must be chosen, it is of the utmost importance to observe the following simple rules, in addition, of course, to the obvious duty of watching closely the breathing, pupils and pulse.

(a) Keep the mask half an inch (1 cm.) off the face. It is not possible to give more than 2% vapour except during violent struggling if this is done.

(b) Withdraw the anaesthetic a little during the deep inspirations of crying or struggling.

(c) Do not allow the operator to begin, or the patient to be moved, until the corneal reflex on both sides is lost.

By these means it is possible to make the risks of vagus inhibition small, but they are by no means abolished.

Cure.—In a good many cases the patient can be restored by very prompt treatment, provided that time is not wasted in futile measures. A little consideration will show how ridiculous it is to give strychnine or camphor or amyl nitrite or digitalin when the circulation has stopped, nor can oxygen or electricity, even if available, do any good.

There are just four things that are worth while, if applied within two or three minutes of the accident.

(a) Inversion of the patient, with the head low.

(b) Artificial respiration.

(c) Injection of four minims of a 0.5% solution of atropine directly into the heart with a hypodermic needle. The value of this drug has been abundantly proved for vagus inhibition by chloroform in dogs, and in a number of cases also in man. It should always be at hand. It will be recalled that the fundamental action of atropine is to paralyse autonomic nerve-endings, and that an excised frog's heart stopped by vagus stimulation (or by muscarin or pilocarpine, which excite nerve-endings) can be started again by atropine.

(d) Massage of the heart. Rapidly cut into the abdomen, and without opening the diaphragm squeeze the ventricles against the chest wall rhythmically. Remarkable recoveries have followed this procedure.

The anæsthetist should conduct the first and second of these manoeuvres, and then, if they fail, the surgeon should carry out the third, and finally the fourth, all within four or five minutes. It is worth while to keep up artificial respiration for some time.

(III) *Delayed Chloroform Poisoning*.—This condition has only recently been recognized. I have seen about four cases in the past five years.

We must first briefly touch upon a new chapter in Physiology which promises to be of wide application. When we burn a pound of fat in a tallow candle, or of a fatty oil in a lamp, it is resolved into CO_2 and water, and a certain amount of heat is evolved. If we eat that pound of fat or oil, it is resolved into CO_2 and water, and the same amount of heat is evolved. But if the tissues cannot obtain grape sugar (dextrose) from the blood, for some reason or other the combustion of fat in the body follows an abnormal course, producing first oxybutyric acid, then diacetic acid, and finally acetone. Acetone is excreted by the breath and urine very readily; the acids are only excreted if in excess. Enormous quantities of these acids may accumulate in the blood, and poison the patient by lowering or reversing its normal alkalinity. The symptoms are vomiting, unconsciousness, sweet breath, and air hunger, and the result is almost always fatal.

The condition is most typically seen in diabetic coma, where the tissues are hungry for sugar, and the blood is loaded with it, but they lack that internal secretion of the pancreas which alone can enable them to utilize it. They are in the position of the beggar with empty purse sitting starving before the sweet stall. It is also seen, in a mild degree, in any variety of starvation from carbohydrates, as in typhoid fever on milk diet, or gastric ulcer on rectal feeding; children are specially liable to attacks of periodic vomiting of this nature. Again, it occurs after the administration of chloroform. Both chloroform and ether cause some acetone to appear in the urine almost constantly, but this is harm-

less. In a few cases, after chloroform only, a remarkable train of symptoms is observed. One, two or even several days after the operation, vomiting and drowsiness come on, and proceed rapidly to a fatal conclusion; there is no cause for shock, and no evidence of suppuration. The breath and urine smell sweet, and the urine shows the presence of diacetic acid and much acetone. At the autopsy, the liver and kidneys are pale and intensely fatty. In the past, these occurrences have been put down to "late shock" (whatever that may mean) or to "septic absorption." The great predisposing causes are obesity and starvation, especially in children.

Prevention.—Something may be done to prevent this sad conclusion to what promises to be a successful operation by careful selection beforehand. Chloroform is contra-indicated in patients, especially fat children, who have been vomiting much or who have virtually starved before operation. Children should not be deprived of food for more than three or four hours before an anæsthetic. If the urine strikes a red colour with ferric chloride (presence of diacetic acid), chloroform is dangerous.*

Remembering that acidosis is due to absence of sugar, it is wise to give glucose in suspicious cases, either by the mouth, rectum, or intravenously.

Cure.—Incessant vomiting after an anæsthetic, by prolonging the starvation, is both a cause and a consequence of acidosis, and should be checked if possible. The best means of doing so is a saline or glucose injection of two or three pints, to be retained, by the rectum. Should the condition definitely become established, both glucose and alkalies must be given, the former per rectum, and the latter intravenously, in sufficient quantity to make the urine alkaline.

† ENLARGEMENT OF SPLEEN—ITS GREAT IMPORTANCE IN MALARIA.

BY

A. M. MASILAMANY MUDALIAR, L. M. & S.
Assistant Surgeon, Rayapuram Medical School.

I have tried many ways during the last 4 years of my study of this all important, all-absorbing and yet utterly neglected subject to bring some facts connected therewith to the notice of my brethren and I may candidly say that I have not succeeded to the extent I expected or that the subject deserves.

[* Do not confuse a reddish brown precipitate, which is merely phosphates of iron.]

† Specially contributed to *The Antiseptic*.

I see over and again malarial cases with distinctly enlarged spleens treated with quinine for a few days only. I see over and again enlargement of spleen persisting, having been utterly ignored or wantonly neglected by qualified medical men; that is, quinine treatment adopted without any reference to consideration for the enlarged spleen, though for a positive practical fact, the enlarged spleen returning to its usual size is the prime factor in the cure of malaria; and when placed in an area where the anopheles indulges, this cure has to be followed by daily ingestion of quinine sulphas, 5 grains, as a prophylactic.

I have heard with my own ears medical men speaking carelessly and loosely of quinine and its efficacy in malaria and of over-rating the ill-effects of quinine. I have always given it in 5 grains, adult doses, 3 or 4 times a day, and I have yet to find a single case in which I have had to discontinue the drug on account of its ill-effects. Babies and children, male and female, boys and girls, men and women, have all taken it with an ease and comfort which would astonish the audience.

I see over and again medical men discontinuing quinine before the spleen has returned home to its original size. I see over and again medical men advocating the use of arsenic, iron, strychnine, in place of quinine before the quinine-required-period has elapsed. It is high time for the "heroic doses" method still advocated by some without any reference to the condition of the spleen to be at once discontinued and its place taken up by the adult 5-grain doses regulated, and such treatment continued until the spleen returns to its normal size and shape, until it gets behind the mid-axillary lines. I beg to quote the following paragraph from Lt.-Col. Hehir's book on Prophylaxis of Malaria in India (1910):—

"Enlargement of Spleen.—This is an invariable accompaniment of the malarial paroxysm, though in the earlier paroxysms it may not be sufficient to be manifest by palpation. It is always appreciable by physical examination whenever malarial paroxysms have continued for a week. This opinion one has arrived at after examining many thousands of cases."

I have examined at least a thousand cases and I am positively of opinion that I never missed the enlargement even in one of them. As I have said, it requires some care and patience to make out the enlargement.

Though we have studied and treated malaria all these years, yet, so far as treatment is concerned, we ourselves seem to be so divided as to the strength of the dose and length of treatment that progress has come to a stand-still, and success has to be delayed to a very undesirable period.

Further, the administration of quinine is not to be the be-all and end-all in the successful treatment of malaria, but the question of prophylaxis becomes equally important in the eradication of the disease from different centres of India.

I beg to quote the following passages, taken from an article headed "The Diagnosis of Latent Malaria", by Dr. A. Plehn of Berlin occurring in the *British Medical Journal* of October 31st 1908:—

"We are able to distinguish three phases. The first phase I should like to call the primary period of latency. It lasts from the moment of infection, mostly unknown, to the first attack of fever. It may last for months and even for over a year in persons using quinine as a preventive. In the latter probably malaria may finally end in this period without causing a single paroxysm of fever. As to the clinical symptoms, they appear in the form of nervousness, indigestion, and anæmia, more or less severe. The red blood corpuscles show basophilic granules, sometimes arranged in the way characteristic of malaria (and other protozoal infections).

"The clinical symptoms used to be considered as signs of acclimatization. However, they seem to be absent in the healthier parts of tropical countries, just as do the basophilic granules.

"The second phase is the one best known. It includes the period elapsing between the single paroxysms of fever. We may speak of intermediate periods of latency. Their duration is, as a rule, very regular, in the single individual without the preventive use of quinine. It lasts from 12 to 14 days, more seldom from 3 to 4 weeks; very rarely the apyretic intervals last only 7 days. Frequently the duration of intermediate periods is quite irregular extending over months. It is so in people taking quinine regularly at short intervals. There may not be any clinical symptoms, as soon as the fever treated with quinine in an adequate manner has passed and the time of convalescence is over. Sometimes slight anæmia may last for a while. *There may remain some swelling of the spleen and liver.* The next recurrence approaching symptoms similar to those of the primary period, may precede it. When the fever treated with quinine in a radical manner is over, the well-known particles in the leucocytes still show for 2 or 3 days. It is specially the large mono-nuclears which take them up, never the small lymphocytes with scanty protoplasm.

"Later on, gametes may continue to appear, but in most cases they are gone after 3 weeks or less. Only exceptionally, I could demonstrate their presence in the peripheral blood until after 6 weeks, never later.

Still more often, the relative increase of mono-nuclears announces the continuation of the latent infection."

He concludes :—" Therefore I should like to call your attention to a symptom easily to be observed, which shows latent malaria still, when the other signs have disappeared. I refer to the urobilinuria of malaria patients."

Against this recorded fact, I place the result of my observation that splenic enlargement is a simpler, a more direct and a most reliable evidence of the malarial poison being in the system and all the force of the argument I lay upon, the reduction in size of this organ to the normal as being the most conclusive evidence of the cure effected in malaria, and of course in a malarious country a 5-gr. dose of quinine once a day should, of necessity, be continued in order to effectively prevent any recurrence of the disease.

Quinine at half anna a packet, six or even a dozen at a time, will not help to solve the problem. I hold, and I am sure I will be supported by more competent and abler authorities, that a dozen doses in the treatment of malaria, *i.e.*, in thorough eradication of the malarial parasite from the blood and reduction of the spleen to normal is simply playing with the disease and not treating it with express and honest intention of curing the disease. Treatment thus carried to the logical extent is unfortunately not uniformly advocated by every medical man. Every time the fever comes on, a few doses of diaphoretic mixture and a few doses of quinine pills till the symptom of fever subsides is the order of the day and thus the disease is kept on recurring in the same man till it gets the better of the man in spite of quinine given and the patient passes into a state of malarial cachexia with a strong conviction that in spite of quinine he had been reduced to that miserable condition. Why, he goes further and says that quinine was responsible for that state of malarial cachexia. He loudly condemns quinine, the drug being a bitter one; the contagion of prejudice against quinine easily spreads. But a careful analysis of the actual conditions would easily convince even the greatest sceptic of the real state of affairs.

Sufficient quinine for a sufficiently long time had not been taken to produce excellent results. Such is the state of affairs obtaining in Madras at the present moment. I beg to request all the members of the profession to lend the weight of their opinion and help.

My advocacy for the use of quinine in malaria is not what I have simply read in text-books on malaria as treatment for 3 months, but I say boldly from personal experience of 350 recorded cases and a larger

number of unrecorded cases which I have studied that the period of treatment with quinine is not to be limited to 3 months which is about the greatest mistake that a malariologist makes. Reduction of spleen to its home should be strictly adhered to as the period of quinine administration as a guide to fix the period. Such a state of affairs is not arrived at unless the patient has taken the quinine for not less than 6 months in ordinary cases and certainly for a longer period in severe cases, but always insisting on the reduction to normal in size of spleen being the best test. To say that the spleen is only slightly enlarged, *i.e.*, that the enlargement is a negligible quantity, is at once unscientific and most harmful. It is a great pity that medical men above all should put such a construction on an enlarged spleen.

I quote from Hutchison and Rainy's Clinical Methods:—" A spleen that is palpable may easily be pronounced to be enlarged and it is never safe to diagnose enlarged spleen unless it is palpable." The mistake made by some is to ignore the enlargement even when it is palpable which is done by a simple but careful examination conducted with the hand, by saying that it is only very slightly enlarged—a statement which must raise the just indignation of the scientific medical man. A spleen that is just felt is three times enlarged if not more, and what does the medical man mean when he says it is only slightly enlarged?

I hope not to tire your patience this evening if I quote a paragraph from what I wrote to *The Antiseptic* in March 1909.

"Then followed, that is about 3 years ago, the very vigorous and minute study of the exact situation of the spleen as evidenced by palpation, percussion, bi-manual examination and by palpation with the patient in the standing posture. I will say that it requires considerable experience to correctly estimate the size of the spleen. It is an organ in the posterior half of the trunk, never felt by the hand in its healthy state even in a deep inspiratory effort and never stepping beyond the mid-axillary line as made out by percussion. It is a very deep-seated organ. It is small. Remember this and you will easily see how its travelling beyond the mid-axillary line on its being actually felt on deep inspiratory effort, would necessarily indicate a considerable enlargement of the organ.

Take a case where the spleen is well beyond the costal margin and under quinine treatment watch it week after week receding by reduction in size to its permanent home behind the mid-axillary line. Then it may be realized how really enlarged the spleen may be and yet escape

our attention and how long it does take to resume its size. Then and then alone, would you realize the importance of prolonged treatment with quinine."

On the other hand, the treatment if not persisted in, the spleen continues to enlarge and when it really becomes large enough to open the eyes of even a careless medical man it is not too late. I beg to say persist, persist, persist, with the quinine, and the quinine will exert a commanding influence over the spleen and will see it go back to its home. Such a most simple truth I have tried to preach to my brethren during the last 3 or 4 years and I must say I have not yet enlisted the sympathy of the majority. This only shows how carefully we should make a proper study of the spleen. Again I must repeat that enlargement of spleen should be the most uniformly and universally recognized item in the diagnosis and treatment of malaria. Microscopic examination of blood for malarial parasites is a splendid aid to the diagnosis and treatment of malaria. But after you once administer quinine how long does the parasite show itself in the blood? Its mere disappearance from the peripheral blood is no evidence that it has altogether disappeared from the circulation and the organs, the bone-marrow, spleen and liver the chief organs containing the pigments all enlarged and which are recognized homes for keeping malarial parasites or their evidences. The period of treatment with quinine cannot be determined by any other method so correctly as by that of reduction in the size of the spleen to its usual size. Thus you see how the condition of the spleen comes to occupy a very pre-eminent position in the diagnosis and treatment of malaria. Moreover, we have a scientific basis to proceed upon. I have tried in season and out of season to demonstrate this single truth and I must say I have not gone very far, I mean as far as I wish it to be understood. Time will yet come when the truth "Quinine for Malaria until the Spleen returns to its Normal Size" will be accepted fully, wholly and universally.

Our Contemporaries.

MEDICINE.

Intestinal Intoxications and Infections.

In the past the influence of bacteria in the mouth and intestines was almost entirely overlooked; now most diseases of unknown causation are referred to oral sepsis or intestinal intoxication. Like the

development of a rumour, the theory is losing nothing in the telling. It behoves us to steer a middle course between the previous neglect and the present exaggeration. Looking at the question broadly as a conflict between the microbe and the organism there must have been evolution in the methods of both attack and defence. ANDREWES has indicated the steps by which harmless saprophytes probably acquired powers of aggressive parasitism, and thus, while securing shelter and abundant nourishment, became dangerous foes to the body. On the other hand the body, first by phagocytosis, aided later by antitoxins and other bactericidal substances, developed its lines of defence against their invasion. At any stage in the evolution of this process there is a position of unstable equilibrium, and the acquisition of fresh powers of attack or defence determines the onset of disease or the maintenance of health. Normal inhabitants of the bowel by straying beyond their proper limits may produce definite infections—thus the *B. coli* may set up cystitis, pyelitis, cholecystitis, or phlebitis, and the streptococcus faecalis can engraft itself on to heart valves damaged by rheumatism. Or the body may fail to neutralise the soluble poisons produced by bacteria and an intoxication result. There are three main lines of defence against the microbe and its toxin—the epithelial resistance, the bactericidal properties of the blood, and the antitoxic functions of the liver.

Whether digestion can be carried on aseptically is a purely academic question, since the opportunity never arises. The infant starts with a sterile alimentary canal, but speedily acquires bacteria therein, chiefly organisms derived from the skin of the mother's nipple. In the intestine of bottle-fed children there are many more organisms of the *Bacillus coli* class. In childhood the *Bacillus putrificus* begins to appear, and the flora of the intestine becomes large and varied.

In putrefaction, abnormal products of disintegration may be set free, and their responsibility for symptoms calls for consideration. The great seat of putrefactive change is the large intestine. Proteins putrefy, carbohydrates ferment, and to a certain extent these two processes are antagonistic. Putrefaction is the disadvantage of a large intestine, the advantage being absorption of water by which the bulk of the faeces is greatly reduced, so that the emptying of the bowel need not occur normally more than once a day. There is also less need for drinking fluid. According to METCHNIKOFF the disadvantages outweigh the advantages, and he almost regards old age as the result of chronic intoxication from the colon. That animals with a short colon are long-lived is, in effect, his conclusion; and some surgeons seem to suggest that it is better to dispense with the colon than to possess an indolent one. This represents

the extreme view; yet we can hardly suppose that the colon would have appeared in evolution without the development of a compensatory protective mechanism against such ill results. Putrefaction mainly affects the aromatic and sulphur containing groups in the protein molecule. Of the aromatic groups tyrosin yields phenol, and tryptophan yields indol and skatol, the principal putrefactive substances normally present. Rarely sulphuretted hydrogen is absorbed and forms a toxic compound with hæmoglobin causing a peculiar form of cyanosis. The sulphates are conjugated in the liver, with the aromatic products to form ethereal sulphates, which are practically harmless. The best recognised of these is indican, a compound of indol and potassium sulphate, which can readily be detected in the urine. HERTER found that the body has the power of rapidly transforming considerable amounts of indol into indican, since, even after injecting as much as $\frac{1}{2}$ gramme into the femoral vein of a dog, he was unable to detect any indol in its blood. This is a good example of the way the body reacts against intoxication by the products of putrefaction. There is normally little indican or other ethereal sulphates in the urine of children and adolescents, but putrefactive processes are more abundant in middle life. Indicanuria is common in students leading sedentary lives.

Administration of indol in repeated doses to rabbits causes, among other symptoms, loss of weight. In man, large doses cause pain and other uncomfortable sensations in the head, with indisposition for mental or physical exertion. HERTER suggests that this latter condition, if prolonged, may form the basis of neurasthenia. He concludes that while indol is not highly toxic persons giving a persistently strong indican reaction invariably suffer from nervous or dyspeptic disorders, and that many find careful living necessary to keep so well as to be able to perform their duties. He regards those with soft arteries and little indican and ethereal sulphates in the urine as "candidates for old age." Exceptionally there may be enough indican in the urine to form a blue pellicle on the surface without special tests. The subjects of this condition are almost invariably badly nourished and in poor, almost precarious, health. But it is not desirable to single out indicanuria as the sole object of treatment, as it is linked to other intestinal conditions. Whether such substances do or do not exert toxic effect depends largely on whether they are free, or whether there is sufficient sulphate to combine with them and render them harmless. GARROD examined the urine of a lady who for many years had applied a carbolic dressing to an ulcer on the leg. He reported that she was on the verge of carboloria, and she subsequently had a sharp attack. His opinion was based on the

observation that almost all the sulphates were in the form of ethereal sulphates, *i.e.*, her power of neutralizing the toxic effects of phenol were taxed almost to the full. A little more and she was over the brink. Now, indol is closely related to phenol chemically. LANGDON BROWN in discussing the bearing of this on indicanuria points out that: (1) When we test for indican, we are testing for just that part of the indol which has been rendered inert. (2) We may here have an explanation of the comparative failure of the phenol compounds as intestinal antiseptics. By combining with the sulphates they deprive the body of the power of rendering harmless those putrefactive substances the formation of which they cannot altogether prevent. He also suggests that this may be an explanation of the value of sulphates in certain intestinal diseases: they are not only aperient, but also antitoxic. The recent discovery by BARGER and DALE of putrefactive substances with a pressor effect suggests a cause for the rise of blood pressure in later life.

The other two food-stuffs may be held almost guiltless as a cause of intestinal intoxication. In fermentative dyspepsia carbohydrates may give rise to oxalic acid, causing oxaluria; more commonly they are a source of lactic acid, which is antagonistic to putrefaction. Fats produce fatty acids as a result of bacterial action, but these are not toxic.

The occurrence of an intoxication from the bowel by the normal or ordinary putrefactive products of food-digestion cannot be regarded as proven. Yet on this unstable foundation the most airy and far-reaching hypotheses have been reared. HERTER attempts to place the matter on a sounder basis in his description of three types of chronic intestinal putrefaction:—

1. *Indolic*, due to the *B. coli*, and perhaps the *B. putrificus*. The commonest form is in marasmic, large-bellied children with chronic intestinal indigestion. Carbohydrates are not well borne, while proteins and fats are digested more readily. The subjects are sharp-witted; they are intolerant of cold, and are easily fatigued. The indican and other ethereal sulphates are markedly increased in the urine. For treatment he advises that the carbohydrates should be restricted to well-cooked rice or biscuits. Milk should be peptonized for a time, and a moderate amount of finely-divided meat given. Gelatin may be useful, because it contains no tryptophan, the precursor of indol. A few rather generous meals are better than frequent feeding. High irrigation of the bowel may be beneficial.

2. *Butyric*, chiefly due to *B. aerogenes capsulatus*. The bacterial action sets free nascent hydrogen which causes much reduction of the

bile pigment, so that there is excess of urobilin in the faeces and urine. Addition of a strong solution of mercuric chloride to the faeces produces a red colour, which is more distinct on throwing the faeces into water. There is little or no indican in the urine. Indefinite invalidism may be the chief symptom. The subject is often sour-smelling; the epithelium of the tongue and mouth is seen to be desquamating. Hence the irritable condition of the alimentary canal, with the tendency to diarrhoea. Shreds of epithelium may be seen in the faeces. HERTER finds that faecal extracts may be hæmolytic in advanced cases. At this stage anæmia supervenes—first a diminution in the blood volume, then of the hæmoglobin, and then of the red corpuscles. Though the symptoms in adults are usually latent or chronic, in infants the *B. aerogenes capsulatus* may be virulently pathogenic. LANGDON BROWN reports a case of a child of 3 that died with symptoms of acute bronchitis. Some petechiæ on the stomach roused suspicions and the heart blood, lung, liver and spleen were found by GORDON to yield the *B. aerogenes capsulatus*, which on injection into guinea-pigs, proved to be very virulent, causing death in 12 hours, with hæmorrhagic necrosis of the subcutaneous tissues.

3. *Combined Indolic and Butyric*.—Under this head HERTER describes a type in which nervous symptoms occur relatively early. The subjects become invalided more rapidly than with either indolic putrefaction or butyric fermentation separately. The outstanding features of the case are mental depression and muscular fatigue.

Definite intestinal intoxications may apparently arise in one of three ways: 1. There may be alterations in the intestinal flora, so that bacteria can thrive which produce specific toxic substances. 2. The bacterial processes may spread up from the large to the small intestine. 3. Normal intestinal bacteria may pass into the blood in consequence of lowered resistance of the epithelium or lowered bactericidal power of the blood. In this connection the premature appearance of the *B. coli* in the intestines of bottle-fed children is important, because in early life the normal mucous membrane is more easily permeable by bacteria, while the intestinal flora should be less varied and less toxic. There is a parallel development of more putrefactive organisms and a higher resisting power. Therefore the *B. coli*, if prematurely introduced into the infant's intestine, may prove virulently toxic.

In many cases it is difficult, if not impossible, to draw a hard-and-fast line between intoxications and infections, because we cannot tell whether the microbe has been able to enter the portal blood-stream, and has

become bacteriolized there, or whether the intestine has merely absorbed the toxins produced in the intestine. Indeed, we can sometimes recognize three stages in the same case:—1. Intestinal absorption of toxins only. 2. The organism in the portal blood, soluble toxins in the general circulation. 3. The organism in the general circulation, *i.e.*, septicæmia. In the future many conditions may be proved to be due to intestinal intoxication, but the evidence is not at present convincing. A few of these may be briefly referred to.

HUNTER has laid great stress on oral, gastric, and intestinal sepsis as the cause of pernicious anæmia, and has made out a case for hæmolysis in the portal area in this disease. Now, HAMILTON finds that the anærobic bacteria naturally present in the human intestine include some highly pathogenic members which, under proper surroundings, can produce marked hæmolysis. In the future we shall probably find that many of the obscure intestinal intoxications are due to anærobic bacteria.

Though cirrhosis of the liver occurs in alcoholic subjects, experimental administration of alcohol leads to a fatty and not to a fibrotic change in that organ. Consequently the condition has been referred to impurities in alcoholic drinks. Thus in wine-drinking countries the potassium sulphate with which the *vin ordinaire* is plastered, and in whisky-drinking countries the fusel oil, have been held responsible. Such wide differences of opinion make it all the more probable that the ingredient common to them all, the alcohol, is the agent. ROLLESTON explains this dilemma by the view that alcoholic excess leads to a prolonged gastric catarrh, which, by lowering resistance, enables toxic substances to be absorbed from the bowel. HAMILTON'S suggestion, which harmonizes with this quite well, is that a microbe is absorbed from the intestine, bacteriolized in the portal blood, and its liberated toxins anchored to the liver substance. This might occur in other than alcoholic subjects, and it certainly appears that we cannot explain all cases of multilobular cirrhosis by alcoholism.

There is a growing opinion that *chronic affections of the joints* are due to a chronic infection or intoxication. Rheumatoid arthritis is a case in point. Either the alimentary or the genito-urinary tract may be the "open door" by which the infective agent enters. And so it has come about that pyorrhœa alveolaris has been regarded as a potent cause of the disease. Cambridge workers found a history of infection in 20 per cent. of their cases, the most common being influenza. They found defective teeth in more than 50 per cent.; but much stress cannot be laid on this, as a large proportion of the cases belonged to the lower classes,

in which sound teeth are the exception. Indeed, on the method of collecting statistics only too commonly adopted, any disease might be proved due to defective teeth. Still, there is sufficient evidence to demand careful attention to the mouth in rheumatoid arthritis, especially if the routine treatment is not satisfactory. Tetany is another condition which has been held to be due to a gastro-intestinal intoxication. Its occurrence in rickets, with gastro-intestinal disturbances, in typhoid fever, and after lavage for dilated stomach, is certainly suggestive.

The following methods of treatment may be adopted in cases of proved or suspected intestinal intoxication or infection:—

1. *Avoidance of Putrefactive Contamination of Food.*—All food should be cooked as far as practicable. Cheese, especially the ripper varieties, should be avoided. All fruit should be peeled. Careful attention must be paid to the teeth, since anaerobic bacteria lurk in the interstices, and these are a great factor in intestinal putrefaction.

2. *Promotion of Prompt Digestion and Absorption.*—Here again attention to the teeth is important, to allow of proper mastication. HCl should be given if it be deficient in the gastric juice. But in the cases of butyric fermentation diastatic ferments are better than HCl, which is not well borne. Pepper, mustard, excess of salt, vinegar, and lemon, are irritant to these patients. Demulcent drinks are indicated. The butyric type need careful preparation for a generous diet. Emotional irritability or mental depression, increase in the ethereal sulphates of the urine, of gas-producing bacilli in the stools, or of intestinal flatulence, are signs that the food should be reduced. Intestinal flatulence especially indicates reduction in the amount of carbohydrates. If there be atonic dilatation of the stomach, lavage should be employed. Rest after meals should be enjoined.

3. *Limitation of the Number of Bacteria.*—Microbes form one-third of the total solids of the stools, though the majority are dead. Intestinal antiseptics is a counsel of perfection, but occasions arise when it appears desirable to do something in that direction. Salol has not been a success. Naphthol, in 5-grain doses in cachets, has given better results. Naphthalene tetrachloride, in 5 or 10-grain doses, has been used with more success. As it is insoluble, and cannot, therefore, be absorbed, it cannot produce a toxic effect. STRASBURGER has found tenacol, in doses of 40 to 60 grains a day, produce a notable reduction in the intestinal flora. COHENDY has been able to reduce the intestinal microbes to one-thirteenth of their number by thymol. Manganese

dioxide, hydrogen peroxide, and ichthyol, have all been recommended by various observers. Calomel in small and divided doses, followed by a saline purge next morning is a time-honoured method of attempting to effect intestinal antiseptics. However useful this may be to start treatment, we must beware of a routine use of strong purgatives to this end, for by removing the superficial epithelium of the bowel they may facilitate septic absorption. Cases of intestinal intoxication leading to methæmoglobinæmia are associated with diarrhoea, so that purgatives would be inadvisable here, except as an initial.

Lactic Acid Ferments.—METCHNICOFF has suggested another way of attacking this difficult problem. Instead of attempting to render the bowel aseptic, he advises the introduction of lactic acid-producing organisms, which are antagonistic to the growth of the putrefactive bacteria. Soured milk has long been a staple article of diet among oriental people, enjoys a high repute as a hygienic measure, and is supposed to promote longevity. BELONOWSKY thought that cultures of *B. lactis*, sterilized at 130° to 140° F., were better than doses of lactic acid, apparently because some other adjuvant substance is produced by the bacillus besides the lactic acid. For similar reasons the addition of the paralactic bacillus has been recommended. Bulgarian "yahourth," or "yoghourt," is milk soured by the most powerful lactic-acid-producing bacillus known. Unfortunately, the commercial product in use contains a diplococcus and a strepto-bacillus also. However, preparations of selected lactic ferments are now on the market.

This lactic acid treatment has been boomed as a panacea in a ridiculous way. In many instances no living Bulgarian bacilli were taken at all; in others the cases were totally unsuitable. The treatment is quite unsuitable for cases of hyperchlorhydria or those in which the intestinal disturbance is due to abnormal fermentation of the carbohydrates. It is inadvisable in rheumatic conditions, and BRYCE regards it as the most serious indictment against it that it tends to induce or initiate rheumatism. The diplococcus of rheumatism thrives particularly well in a lactic acid medium. Tablets of all kinds are unsatisfactory as a method of administration of the organisms, which are too delicate to survive such handling with certainty. Only fluid cultures or milk actually soured by and containing the bacilli should be used. These methods are superior to simple administration of lactic acid, which is almost certainly absorbed before the point where it is required is reached.

The consensus of opinion as expressed in recent discussions at the Royal Society of Medicine and the British Medical Association was that

benefit may be derived in the following groups:—1. Cases in which the effect was simply due to suggestion, as in neurotic patients and *malades imaginaires*. 2. Cases in which the treatment induced patients to take a considerable quantity of a nourishing and usually easily digested food. Allied to this is its usefulness in diabetes, since the conversion of the sugar into lactic acid would enable the patient to continue to take milk without harm. But caution is desirable in cases complicated by acidosis. 3. Cases in which the treatment might be expected to produce a specific effect because the microbe responsible for the intoxication or infection cannot flourish in an acid medium. The reaction of the fæces will be a guide: if they are acid, this treatment is unsuitable; if they are alkaline at first, but yield a fair quantity of gas in the fermentation tube, showing an acid reaction after, the treatment will probably not be successful. Good results can be expected only when the fresh fæces are alkaline and remain alkaline after 24 hours, yielding hardly any gas to the fermentation tube. To sum up, lactic acid therapy has not justified the extravagant claims made for it.

Vaccine Treatment.—Good results from this method have been recorded in several cases. A blood culture will usually be sterile, so that more elaborate means have to be taken to identify the responsible microbe. A plate culture may be made from the stools, and the effect of the patient's blood in agglutinating or destroying the more definitely pathogenic organisms tried. A positive reaction would justify the use of a vaccine prepared from such organisms. In the case of *B. coli* vaccines, SIDNEY MARTIN advises beginning cautiously with small doses such as one to four millions of the dead bacilli.

Surgical Procedures.—Irrigation of the colon through an appendicostomy wound has been recommended, but the results have been rather disappointing. Even excision of the colon has been advised.

We have attempted to describe the present position of our knowledge of intestinal intoxications. The lines along which advance may be made will be evident. Casually testing the urine for indican is not sufficient for diagnosis, nor does purgation and extraction of the teeth comprehend the methods of treatment.—*The Medical Review*.

The Pulse and Epileptic Seizures.

IN his Goulstonian lectures DR. A. E. RUSSELL has supported the view that the existing cause of the epileptic fit is a sudden lack of arterial blood in the brain, and from certain observations of his own he puts forward the proposition that in some cases at least there is a cessation of the pulse before the fit. DRS. GIBSON, GOOD and PENNY have

succeeded in obtaining from five epileptic subjects pulse tracings which show the transition from the normal to the epileptic stage and are published in the *Quarterly Journal of Medicine*. No cessation of the pulse is visible on any of the tracings, though in one case the pulse at the wrist as palpated by the finger seemed to have disappeared; but the authors point out that in the spasms of epilepsy the anterior tendons of the wrist may become so tautened as to conceal the pulse-wave to the examining finger. They confirm the conclusion reached by MUNSON that there is a slight quickening of the pulse immediately preceding the fit, but the graphic records taken from the brachial artery show that there is no alteration of the pulse sufficient to affect the amplitude of the wave up to the point when clonic convulsions prevent its being properly recorded; in more than one record the fit was definitely in progress before the record was thus interfered with. They find no such lowering of general blood pressure as to suggest that cerebral anæmia from any general cause can produce a convulsion. They do not wish, however, to deny that stoppage of the pulse is a possible cause of epilepsy; but they look for the mechanism of the fit rather to a local cause in the brain, such as a vasomotor spasm, than to a general cause such as lowering of blood pressure from cardiac inhibition or splanchnic dilatation.—*The Hospital*.

Induction of Vomiting in Hysteria.

When called in a case of hysterics, do not waste time ascertaining if her grandmother was insane. Relieve anxiety by promising a cure in five minutes, and immediately give a hypodermic injection of 1-10 grain of apomorphine. Then hunt for a basin for the girl to vomit in. No person has ever yet succeeded in continuing a hysterical attack and vomiting at the same time. After you have done this, you may go into the history, prognosis and treatment. The rush is over.—*P. M.*

Obstinate Asthma Cured by Asafœtida.

DR. POST of Maquoketa describes an interesting case of asthma that he had. He writes:

"Thirty years ago I was in charge of the poor-department medical practice of my native city, and once was called to a police station to see a middle-aged tramp who was suffering from an exaggerated asthmatic attack. I relieved him with a hypodermic of morphine and atropine, and after he had got so he could talk, I began to quiz him about his attacks. He had got so far along that they recurred nightly and he was pretty nearly down and out. By direction he called at my office next day to receive some general treatment and advice. During our con-

versation it came out that for five years he had been an orderly in Bellevue Hospital, and had received all kinds of general treatment for this asthma, none of which availed in preventing the recurrence of the paroxysms. This information rather put a damper on any hopes I might have entertained of giving him any help.

"As I stood looking over my drug shelves, the thought came to me that asafoetida occasionally proved useful in spasmodic attacks, so in desperation I handed him one hundred 5-grain pills of that drug, with directions to take 2 of them four times a day, watching his egress from my door with a feeling of relief that I had gotten rid of the case. But to my surprise he came back in about ten days with the surprising information that he had had no further attacks in that space of time and jubilantly asked for a further supply of medicine and a copy of the prescription as he had made a raise and was going to his old home. I furnished him with the prescription and medicine and never heard anything more of him. Of course, I had given him general directions about his functions and had impressed him with the necessity of eschewing his daily alcohol. I mention this case because doubtless you will have many reports of cases treated by the routine measures, and I thought this report would be a diversion."—P. M.

Hæmorrhoids—Proctitis as a Cause of.

Having noted that hæmorrhoids very frequently co-exist with catarrhal inflammation of the rectum, the author is of the opinion that proctitis often bears a direct causative relation to hæmorrhoids and that it should therefore receive a large share of attention in the treatment. Cases of acute catarrhal proctitis showed that as the inflammation subsided the œdematous hæmorrhoids also became reduced and gradually disappeared. According to the author, the hæmorrhoid secondary to proctitis results from a gradual hypertrophy of the mucous membrane due to its inflamed condition, this being followed by a separation of the mucous membrane and the sliding down of a small portion of it into the grasp of the sphincter muscles. This small outgrowth becomes filled by serous exudate from the vessels lying within its sub-mucous tissue, which are themselves thereby gradually lifted away from the muscular layer. The parts being constantly in a state of hyperæmia, a well-organized hypertrophic mass at length results, which is recognized as a hæmorrhoid.

The primary etiological factor in the causation of hæmorrhoids from this point of view being most probably a digestive disturbance, gastric or intestinal, with products of fermentation acting as irritants to the

mucosa, the treatment of this form of hæmorrhoids should consist of arresting fermentation and over-acidity with intestinal antiseptics and the alkalies, relieving the liver by restricting the use of carbohydrates, prohibiting the use of alcohol, tobacco, coffee and tea, guarding against over-indulgence in rich food, and encouraging exercise or rest as indicated.

Where the proctitis present in association with hæmorrhoids is of an acute catarrhal type, the rectum should be washed out each day for a week with a gallon or more of water at 110° F., or with any of the mild solutions used for the nose and throat. Each irrigation should last not less than fifteen minutes. In the subacute and chronic forms of proctitis, after using the irrigations for a week, a weak solution of one of the silver salts may be injected every second or third day; or an application of some combination of the following remedies may be made, either in the form of a suppository, or as an ointment, by means of the hard-rubber pile-pipe; ichthyol and iodoform, for their alterative and stimulating action; tannic acid, adrenalin and hamamelis, for their astringency; and belladonna or stramonium, as sedatives.—*Monthly Cyclopaedia and Medical Bulletin.*

The Detection of Blood Pigments in the Fæces.

THE detection of blood pigments in the fæces may be of the greatest value in diagnosing early malignant disease of the bowel, and in distinguishing between functional and organic disease of the stomach. When bleeding occurs from either the stomach or the duodenum the red blood corpuscles rapidly disintegrate, and the blood pigment is changed from hæmoglobin to hæmatin; hence the microscopical test for blood fails to detect blood in the fæces in the majority of cases in which its presence is not obvious to the naked eye. Even large quantities of hæmatin may only cause a slight darkening of the stool when mixed with any considerable quantity of solid fæces; and many food-stuffs and drugs may cause similar darkening, so that the mere colour of the stool is often deceptive.

SOME USEFUL TESTS.

The following are some of the various tests that have been applied for the detection of minute quantities of blood pigment in the fæces:—

1. *Teichmann's Hæmin Test.*—It is said that hæmin crystals may be obtained from the fæces containing blood by the well-known medico-legal test that we owe to Teichmann. It is probable, however, that the amount of blood present must be more than a little before the hæmin crystals are obtainable.

2. *The Guaiacum Test.*—A quantity of faeces is thoroughly mixed with about one-third its volume of glacial acetic acid and thoroughly stirred; an equal volume of ether is then added and the whole shaken up and allowed to stand until it is thought that the ether has extracted the blood pigment. When the mixture is allowed to stand the ether floats to the top; about 2 cubic centimetres of the ethereal extract are decanted off and the guaiacum and ozonic ether test applied to it in the ordinary way that is employed in testing urine. If blood pigment is present a deep greenish-blue colour is produced. To ensure sensitiveness the guaiacum solution should be freshly prepared.

3. *The Aloin Test.*—This is employed in the same way as the guaiacum test, aloin being substituted for guaiacum.

4. *The Benzidine Test.*—There are various modifications of the benzidine test, one of the most convenient perhaps being that described by SCHLESINGER and HOLST. A piece of faeces, the size of a pea, is macerated in 5 cubic centimetres of water. The faecal suspension is raised to boiling point and then cooled. The benzidine (Merck) is made up as a saturated solution in glacial acetic acid, 10 drops of this being mixed with 2 drops of the faecal solution, and 3 drops of hydrogen peroxide are added. If blood pigment is present a deep green, or a deep blue colour is obtained within a few minutes.

5. *The Spectroscopic Test.*—The faeces are extracted with glacial acetic acid and ether as described above for the guaiacum test, and the ethereal extract is examined spectroscopically in the ordinary way; the absorption bands of acid haematin are seen if blood pigment is present.

CONCLUSIONS.

DR. A. J. CLARK (St. Bartholomew's Hospital Reports, vol. xlv.) has carried out numerous experiments with all the above tests, and has investigated the effects upon them of the administration by the mouth of various different food-stuffs and of various drugs. His summary of conclusions is as follows: (1) The guaiacum and benzidine tests will show the presence of the smallest quantities of blood in the faeces. (2) Of these tests the benzidine is the more convenient, but the guaiacum the more reliable. (3) The spectroscopic test when positive is of great value, but when negative it only proves the absence of large quantities of blood. (4) The smallest quantity of blood entering the bowel, either in the food, or by hæmorrhage, causes blood pigments to appear in the faeces. (5) For the above tests to be of clinical value the patient must have been for three days on a diet free from meat or green vegetables, or iodides. (6) To establish a negative result the faeces of three successive days must

be tested. (7) When the above precautions are observed, a positive result indicates the occurrence of bleeding in the bowel. (8) Malignant disease of the stomach or intestine nearly always causes blood pigment to appear in the faeces. (9) Ulcer of the stomach or duodenum usually causes blood pigments to appear in the faeces. (10) The above tests may also be applied to test the presence of blood in the stomach contents, or in the urine.—*The Hospital.*

Appendicostomy for Chronic Dysentery.

It is now some time since appendicostomy or cæcostomy was advocated in the treatment of chronic dysentery, chronic colitis, and allied conditions, in order to allow of thorough and repeated irrigation of the lower bowel. A report on thirty-one cases is published by DR. WALTER D. WEBB in which the operation has been carried out. The patients suffered from chronic amoebic dysentery or chronic colitis following acute dysentery. The operation of appendicostomy followed by irrigation gives satisfactory improvement in the symptoms, but does not suffice to produce cures. If the openings are allowed to close, the dysentery returns. In the amoebic cases the parasites rapidly disappear during the treatment. In five cases cæcostomy was performed; but the author is of opinion that appendicostomy is to be preferred, and should always be chosen unless there is some special reason against its performance. There appears to be a great tendency to weakening of the abdominal wall, and in eight cases a ventral hernia took place.—*Ibid.*

Spasm of the Glottis in Broncho-Pneumonia.

VARIOT and PIRONNEAU.—Spasm of the glottis during the course of broncho-pneumonia is rarely observed except when preceded by laryngitis, and its occurrence under these circumstances suggests the presence of diphtheria. A case of this condition, apparently solely dependent on the presence of broncho-pneumonia, has been recently observed by the writer.

A child, aged 4½ years, admitted to hospital suffering from fever and catarrhal symptoms suggestive of measles, the eruption of which appeared 3 days later. Two days afterwards there were symptoms of broncho-pneumonia which improved on the following day. Next day the temperature was 100·3° and in the morning a sudden attack of spasmodic cough, resembling whooping cough, occurred, and was accompanied by loss of voice but was not preceded by hoarseness. This was followed by visible efforts on inspiration, though no obstruction of

the pharynx was present. A bacteriological examination of the secretions of the throat was made and pending its result antitoxin was administered. The dyspnoea increased and the patient became cyanosed, and $\frac{1}{2}$ cm. of morphine failed to give relief. Intubation was performed and the child soon slept quietly and respiration became regular. No membrane was seen, but on coughing much purulent sputum was rejected. The following day the respiration was rapid, but without effort. Loeffler's bacilli were not present. The tube was withdrawn on the next day, but the child died of broncho-pneumonia 2 days later without recurrence of the dyspnoea. At the necropsy the larynx showed no morbid change; the lesions of broncho-pneumonia were well marked. The glands at the root of the lung were but slightly enlarged and did not compress the recurrent laryngeal nerves. Similar cases have been described by VARIOT as spasm of the glottis of pulmonary origin, and it is probable that the laryngeal spasm is a reflex effect from the pulmonary lesions or a variety of convulsions analogous to those observed in the course of asphyxia.—*The Medical Review*.

Economy in Hypodermic Needles.

The Medical Record draws attention to the carelessness of members of the profession in throwing away hypodermic needles which have become occluded owing to the deposition of material derived from the fluid used for injecting. All that is necessary to be done in order to restore the brightness of the external surface of such needles, as well as to cleanse them internally by dissolving out the precipitated material, is to boil them for a period of ten minutes in a solution of sodium bicarbonate in water. The economy of such a procedure is obvious, for the sum total of hypodermic needles thrown away by practitioners must amount in the course of a year to many thousands, which, in view of the cost of such articles, must represent a large sum of money.—*The Hospital*.

SURGERY.

Suprapubic Drainage of the Bladder as an Alternative to Prostatectomy and as a Means of Relief.

J. B. PIKE, M.R.C.S.—Prostatectomy in selected cases, performed by an operator of ample experience, is doubtless a satisfactory measure. If a large margin of risk had not to be allowed for, no surgeon would condemn a patient to the inconveniences of the catheter life. Suprapubic drainage is a middle course, and in many things a middle course

is advisable. In cancer of the bladder radical removal is to be aimed at, but how often does it succeed? The bladder is removed and the ureters are transplanted, either in the abdominal wall or the rectum. In both methods the result is doubtful, even though at first it may appear good. There are, however, some cases in which removal, either of the growth or the organ, seems hopeless, and here as a means of relief suprapubic drainage appears to have a valuable place. The following are illustrations:—

CASE 1.—A farmer, of good physique, aged 69, was admitted to hospital on Oct. 25, 1904, suffering from acute retention, due partly to enlarged prostate and partly to a tight traumatic stricture of the membranous portion of the urethra. Catheterism was unsuccessful, and aspiration gave temporary relief. Next day a puncture was made above the pubes, with a trocar, and a Jacques catheter was inserted through the cannula. The patient managed somehow to get this out in the night, and thus rendered cystotomy imperative under somewhat unfavourable conditions. The bladder was stitched to the edges of the wound, and a large tube inserted. Prostatectomy was suggested, but declined. He returned home and drained the bladder with some sort of rubber tube for about 2 years.

Having allowed the sinus to close, he returned with retention in Mar., 1907. Relief was given by aspiration, and he passed water by the natural channel with increasing difficulty until Nov., 1907, when it was necessary to reopen the bladder. This was done through the scar tissue, partly by incision, partly by trocar, the cannula being retained. Various experiments with silver tubes were made, and at last one was got which suited. Since that time there has been little trouble, and the general condition has for the most part been good.

CASE 2.—For multiple papilloma above the trigone exploratory cystotomy was done. The multiple nature and situation of the growth prevented anything further. As frequent micturition would probably become painful if the wound closed, the writer kept a rubber tube permanently in the bladder. For many months great relief was obtained.

In these painful cases the alternative is poor at best, but slight relief is some advantage.—*The Medical Review*.

The Modern Treatment of Fractures.

"PARADOXICAL as the statement may appear, the subject of fractures is a comparatively new one. This is to a large extent the result of the insurance of workmen against injuries, and in part to the advent of Rontgen's discoveries of the X-rays. Both factors led to a greatly in-

creased activity in the study of fractures, and a very large amount of work, both clinical and experimental, has been put out in consequence; the after-effects have been more closely studied; new types of fractures have been brought to light, and the treatment of these injuries probably receives greater attention at the present time than it has ever done previously."

So MR. PRINGLE begins his book, and although he modestly calls it a compilation, we feel when we lay it down that it is a highly useful practical work, containing an amount of concentrated information that is almost startling by reason of its importance. It is the first English monograph that deals thoroughly with fractures, and although *precis* and condensation are necessary when we consider that the author has only some 360 odd pages of large, easy print available, it is surprising to note how well the process of boiling down has been managed. For the rest, it is only necessary to say that the book comes from the publishers of the Oxford Medical Manuals, and is included in their Medical Publications series; these are credentials which should ensure it a welcome anywhere among practitioners. And this is essentially a practitioner's work. The hospital surgeon will find comparatively little that is strikingly new here, although even for one who daily dabbles in plaster and in skiagraphic examinations it is interesting. The first part deals with general considerations, and is wholly admirable—even when, meticulously, one deplores the brief mention of bone cysts as a cause of fracture at the expense of a somewhat longer note on aneurism of the aorta as a causative factor. Personally we should have thought that it was far more important to deal with cysts, which are not so rare as is supposed, which may cause strange and weird fracture phenomena, and the diagnosis of which means a very great deal to the patient. Again, to be meticulous once more, why leave out in the lengthy note on crepitus as a sign of fracture the sometimes very useful osteophonic percussion? Unless crepitus is evident on examination it is, in our opinion, a mistake to try and elicit it by systematic movements. Or in the section dealing with causes of non-union, why omit tight splinting and absolute immobility? There have been cases in which the surgeon wired the bones so tightly that union did not result until the joint was loosened. It is well to draw attention to the importance of helping nature along by a little judicious worrying! But these cavillings are side matters, and the main point after all is treatment.

We note with pleasure Mr. Pringle's soundness and moderation, both of which are in agreement with the consensus of surgical opinion. To wire or not to wire is far too commonly the question in cases where

conservative methods should only be considered. Here the reader will find a full *résumé* of all the available methods, from the old splint method to Lucas-Champonniere's early mobilisation splintless method, which is now-a-days so often and so successfully tried in cases of Colles' fracture. The author does not approve of immediate plaster immobilisation; in our opinion he lays too much stress on the objections to this method, since a well-applied Croft, for example in a case of Pott's fracture, does excellent service, and by equal, and to some extent elastic, pressure really minimises the amount of swelling. The *sine que non*, of course, is that such plaster splints should be very carefully applied, preferably only when the patient is fully anaesthetised. No mention is made of the much lighter and very excellent celluloid splints; they are, it is true, rarely used in English practice, since most of us do not know the multifarious uses of the acetone pot, but they are well worthy of a trial. Deserved stress, on the other hand, is laid on the importance of extension, and this part of the work demands the practitioner's careful attention. The diagrams showing longitudinal and lateral traction are good, and this descriptive letter-press is quite clear, so that this part is really very helpful. The short discussion on open methods is impartial, and puts the case very well. We note with some surprise that the author favours fixing by wire in all cases of compound fracture; these are really the most difficult class of cases to keep aseptic, and, in general practice at least, preferably treated by conservative methods. The ambulant treatment is not so fairly presented; in Mr. Pringle's opinion it is only suitable in a few extraordinary cases. With proper apparatus, fixed under the surgeon's own supervision and not left to the care of instrument-makers, the ambulant method is, in our opinion, a good one, and certainly, from the patient's point of view, to be preferred to splinting. In the case of children, for example, the ambulant method for fractures of the lower humeral shaft, by means of a weight carried in the patient's hand, is certainly an effective method, and ought to have been dealt with.

SPECIAL FRACTURES.

Coming to special fractures, the book contains much that will be interesting and novel to those who have not followed the newer Continental methods, especially those of the Cologne school. Fractures of the skull, trachea, vertebrae, and pelvis are well described. Unfortunately the treatment here is scarcely modern, for we have not advanced much since the days when Hippocrates proposed to treat a fracture dislocation of the spine by opening the abdomen and reducing the fracture by digital pressure! In the treatment of pelvic fractures,

somewhat more should be stated about the desirability of fixation in plaster if necessary; the obstinate sciatica that not infrequently results from ordinarily treated cases the general practitioner has to cope with, not the hospital surgeon. The author describes his method of treating fractures of the former by his adjustable plane. This seems a good modification of the usual method. The angles of the splint can be varied to suit any particular case, and an extension cord, acting in the leg axis over two distal pulleys, is a useful adjunct. This method seems specially suitable for shaft fractures just below the trochanter, and does not press upon the posterior vessels and nerves so much as the middle angle of the ordinary double-inclined plane does. Hodgen's and Bryant's methods are well described, while the Long Liston (not, however, Desault's) splint is illustrated as well. We are particularly struck with the excellence of the illustrations and the description of apparatus in the book. The photographs showing the examination for fractures at the lower end of the leg, the various modifications of clavicular fracture bandages, and the application of Middeldorp's splint in fractures of the arm bones are especially good. There is an admirably clear chapter on fractures and their results in connection with compensation claims; this is one of the most helpful articles on the subject that have appeared in print, and for it alone the practitioner should give the book a place in his library. Finally, there is a valuable bibliography, British as well as foreign, at the end, and a useful index.

We have no space to deal in detail with the special fractures and their treatment. Every one is lucidly described, often with skiagraphic reproductions, which are much more useful than the diagrams one meets with in ordinary text-books. In view of the importance of the whole subject, especially in private practice, the book is a very serviceable one, which should attain wide popularity. It is thoroughly practical, well written, and contains many hints such as only a large and wide experience can give, and which are likely to prove of great help to those who have cases of fracture to treat.—*The Hospital*.

Treatment of Embolism of the Femoral Artery by Immediate Massage.

PAUL CLAISSE.—A woman, aged 33, was admitted to hospital for heart disease. At 12 she had an attack of rheumatism, after which she suffered from dyspnoea on exertion. At 30 this increased so much that all work was impossible.

Examination showed signs of mitral stenosis—a presystolic murmur and reduplication of the second sound. The pulse was small and irregular, the liver was enlarged, and there were epigastric pulsation and a little oedema of the ankles. Under rest, milk diet, and digitalis she improved, and the oedema disappeared. At 7 o'clock one morning she felt intense pain in the left leg, particularly in the calf, and tingling and darting pains extended throughout the whole limb, even to the toes. At 9 o'clock the writer saw her. The pain persisted, and he found the left foot very cold. Pulsation was present in Scarpa's triangle, but none was perceptible below this. Evidently there was embolism of the lower part of the femoral or of the popliteal artery. In order to break up the clot the writer energetically performed petrissage of the limb, especially over the internal surface of the thigh, calf, and popliteal space. The massage was well borne and did not increase the pain. The pain soon diminished, the temperature of the two lower limbs again became the same, and pulsation returned in the dorsalis pedis. After 20 minutes the signs of embolism had disappeared.

A clot formed in the heart in consequence of the mitral lesion, entered the circulation and became fixed in the large artery, exposing the patient to the danger of gangrene. By massage the clot was broken up into small particles, which were carried to arteries of less calibre where the collateral circulation was assured and they were not a source of danger. The utility of early massage in such a case is evident and has been previously described. In arterial obstruction there is a tendency to follow the same treatment as in venous obstruction and immobilise the limb. In phlebitis immobilisation is necessary; the clot must be carefully conserved at its initial site, for fear of the serious complication of pulmonary embolism. On the contrary, immobilisation is irrational in arterial obstruction. Some times the clot breaks up spontaneously and the signs disappear, but early intervention much increases the chances of recovery. The prognosis will be more favourable the more recent the embolism.—*The Medical Review*.

RECENT LITERATURE ON SYPHILIS. The Practical and Scientific Significance of "606."

Ehrlich's New Remedy.

Even the most fastidious critic will have to admit that EHRLICH's remedy for syphilis, designated, let us hope temporarily, "606," is an eminently practical one, and that it came to stay. Brief as the history of the clinical tests of that remedy is, it contains overwhelming evidence of its marvelous efficiency. By this time EHRLICH is probably in possession of reports of 8,000 or 10,000 clinical cases in which the remedy has been employed. The German medical literature of the last three

months contains numerous articles, embodying the experience with this new remedy, critically collected by authoritative clinicians and dermatologists. All agree that the remedy acts miraculously even in those cases in which mercury and other anti-syphilitic drugs fail to produce results. After a single injection of "606" primary, secondary and tertiary syphilitic manifestations show a striking improvement in a few days and are often completely healed in less than fourteen days. Not only do all spirochetes disappear rapidly and completely after a single injection, but the ulcers, which become soon clean, epidermize with unusual rapidity. At the same time the general condition of the patient undergoes a marked improvement. The remedy then renders a twofold service to the diseased body; it destroys the parasitic foe and assists the afflicted host. So far, only very few cases, if any, failed to respond to the new treatment, and only in a few instances was there a recurrence of the symptoms after the first treatment—due apparently to the smallness of the dose which was employed at the beginning. But even in these cases a repeated injection brought the desired effect.

The new treatment proved to be remarkably free from serious complications and consequences. No ocular, renal, nervous or other symptoms of a serious nature were observed by those who had the opportunity of testing the remedy in hundreds of cases. This is not the place to dwell upon the particulars of the brilliant results. Without doubt, the remedy has its limitations. It will take the ripened, critical experience of many years to establish definitely the indications and contra-indications of this remedy. But already now we may claim, on the basis of the accumulated evidence, "606" is one of the most effective practical remedies we know in medicine.

However, great as the practical importance of this remedy is, we should not lose sight of its theoretical origin, and its scientific significance. We should bear in mind that the curative action of "606" upon syphilis is based essentially on the destructive action of substance upon the spirochetes, and that it exerts a similar action upon other affections which are also caused by spirilla, for instance, yaws, foul spirillosis and relapsing fever. These various affections stand clinically mostly far apart. The new substance is therefore essentially a specific against protozoan spirilla. For many years EHRLICH advocated the view that the action of a drug upon a living organism depends upon its having a special affinity for special cell groups or organs of that organism. In his brilliant studies upon immunity this view was more definitely expressed in the assumption that the mechanism underlying a specific action represents a chain consisting of (1)

specific receptors attached to the cells to be acted upon, (2) specific complements which exert the action, and (3) a specific intermediary body, amboceptor, which unites the complement and the receptor, and thus brings about the specific action. When a few years ago it was found that atoxyl, an organic arsenical compound, exerts a destructive effect upon trypanosomes, EHRLICH re-investigated the constitution of that compound and discovered that it consists of the benzol ring to which only the As is firmly attached while all other adnexa of the compound are easily substituted by a variety of chemical molecules. In such a compound the As plays the role of the complement, while the other chemical molecules attached to the benzol ring serve as specific intermediary bodies, to connect the active substance with the receptors of some body cells. Atoxyl contains specific chemical molecules for the receptors of the trypanosomes, hence its destructive action upon these parasitic protozoa; but it apparently contains also intermediary chemical molecules for vital parts of the nervous system of the afflicted animal organism. EHRLICH then set out to create such substitution products which would have specific affinities for the invading protozoa and none or few affinities for the vital parts of the endangered host. EHRLICH and his co-laborers tested so far more than 600 synthetic products, among which only three were found which answered this purpose. It was further found that the acetyl groups of the arsenical compounds seem to have a greater affinity for trypanosomes while the amido and hydroxyl groups manifest a specific affinity for the receptors of the spirilla.

The 606th synthetical compound, which proved to possess specific affinities for spirochetes, bears, therefore, also the name of dioxy-diamido-arseno-benzol in which, it may be said, the stable arseno-benzol plays the part of the complement while the hydroxyl and the amido groups play the part of specific amboceptors.

Some of the many facts which came to light and had to be carefully considered in these ingenious, laborious and purely scientific investigations must not be lost sight of also in the practical clinical endeavors. It was found that micro-organisms which withstood the deleterious action of an arsenic compound acquire resistance to arsenic, become, as is technically expressed, "arsenfast" and give rise to the development of arsenfast generations which readily resist the destructive action of that compound. The further administration of larger doses of the remedy endangers only the life of the host, but not that of the hostile parasite. In order to attain success it is, therefore, necessary to find active substances which would be capable of completely destroying all parasites with

a single injection. This ideal success EHRLICH designates as *theapia sterilisans magna*. Furthermore, in the course of the study of the value of the action of each new compound, there had to be established for each individual species of animals, (1) the largest dose which a healthy animal would stand without any visible harm (*dosis tolerata* = t), and (2) the smallest dose which would cure an infected animal by a single injection (*dosis curativa* = c). EHRLICH'S efforts were directed to find a substance, the curative dose of which would be much smaller than the tolerated dose, or in other words, the quotient t/c would be much smaller than 1, so that in case of necessity much larger doses of the substance could be employed without fear of endangering thereby the life of the infected individual. The new substance "606" offers such ideal relations. The *dosis tolerata* (t) of this substance is for any animal not less than 0.1 per kilogram: this means a dose of about 5 grams for a human being weighing 100 pounds. The clinical experience has demonstrated, however, that a single dose of 0.3 is sufficient to cure an infected human being. This means that for "606" the curative dose is less than $1/16$ of the tolerated dose, or the quotient t/c is less than $1/16$. It is therefore evident, theoretically at least, that much larger doses than 0.3 can be injected of "606," if required. However, here the clinical experience alone should decide what may or may not be done.

The following two closely related facts are of considerable theoretical and practical importance. It was established that "606" is incapable of destroying living spirochetes outside of the body, in the test tubes. That substance, therefore, is not a germicide in the usual sense; it develops its destructive action only within the body. Then there are two clinical reports on record, in which the injections, which were given to a syphilitic nursing mother, cured the syphilitic infant, although not a trace of As could be detected in the mother's milk. It is evident that in these cases it was not directly the As which killed the spirochetes and cured the babies. The effect must have been due to some reaction products which developed within the system of the mother and were transmitted to the system of the baby with the milk by the way of the gastro-intestinal canal—all of which is most remarkable!

In recent articles in medical journals of this country it was suggested that until EHRLICH'S "606" is generally available, sodium cacodylate should be used in syphilis. From the statements made above it can be readily seen that such a suggestion is ill founded. It is evident that the complete success which has been attained with the new treatment has been and can be attained only by specifically prepared arsenical compounds. Various organic preparations of arsenic

were used before in the treatment of syphilis; the literature contains many statements on the partial success, failures and some evil consequences of these treatments. Moreover, we have now good reason for advising against the preliminary use of sodium cacodylate: in the patients so treated the surviving spirochetes might become "arsenfast" and thus the patients may be deprived of the benefits of a subsequent treatment with 606. There is already such a warning instance on record. In a patient (in Vienna) who had been previously treated with sodium cacodylate the injection of "606" proved to be incapable of destroying all the spirochetes and within a few weeks after the injection they reappeared in full force.

To recapitulate briefly "606" is a synthetic chemical product; it is of immense practical value in syphilis; it is a specific curative remedy against various diseases that are caused by various spirochetes; it sterilizes the entire infected body with one single injection in less than twenty-four hours.

I may be permitted to add the following remarks:

Since the external manifestations of syphilis are the main sources of infection and since it is established beyond the shadow of a doubt that these manifestations can be made to disappear by a single injection of "606" in a few weeks, it follows that by compulsory use of such injections the curse of syphilis could be greatly reduced in the near future and perhaps finally be even eradicated. Sanitarians and those who are interested in public health should take this suggestion under advisement; it is now a practical, no longer an utopian idea.

Finally, I would say that physicians, in availing themselves in their practical work of this brilliant new remedy, should not forget that it came from theoretical laboratory studies, and again that physicians and the public should never forget that without animal experimentation the discovery and development of this blissful remedy would have been absolutely impossible.—S. J. MELTZER. *New York State Journal of Medicine*.

Dioxy-diamido-Arseno-Benzol ("606") in Syphilis.

PROF. KONRAD ALT.—PAUL EHRLICH has recently introduced several preparations of arsenic which are superior to atoxyl in the treatment of disease due to trypanosomes and spirilla. Of these arsazetin is active but dangerous. Good results were obtained in syphilis and parasymphilitic affections and sleeping sickness with arseno-phenyl-glycin. But the most active of all arse-

nical preparations appears to be dioxy-diamido-arseno-benzol ($C_{12}H_{11}O_2N_2As_2$) or "606" as it has been labelled by its introducer. The action on animals was first extensively studied by Hata. It is a sulphur-yellow powder, of which 0.3 to 0.4 gm. in solution may be injected into the gluteal muscles. At least 20 c.c. of fluid are required and the injections are painful, but the pain usually subsides within 24 hours. The injections are usually followed by transient pyrexia. The writer treated 23 patients—mostly suffering from general paralysis of the insane—with a single dose of 0.3 gm. In 18 Wassermann's reaction was positive. After the injection the reaction completely disappeared in 2, became much feebler in 2, and to a lesser degree was weakened in 3. These facts indicate a specific action. The drug was then employed by SCHREIBER in the Magdeburg hospital in 27 cases of recent syphilis. The results of a single injection were surprising. Even in the most refractory cases immediate improvement occurred after a single injection. Primary sores lose their hardness and rapidly heal, maculopapular eruptions disappear—leaving at most pigmentation—and ulcers of the labia completely heal in a few days. Condylomata and tertiary ulcers also heal rapidly, though 3 or 4 weeks may be necessary. Specific pharyngitis with slimy discharge subsides within a few days. Of SCHREIBER'S 27 cases only 2 completely lost the Wassermann's reaction after a single injection. Possibly in time it may disappear in others. It may be found that a larger single dose is advisable or that some months after the first a second injection is necessary. These points require working out.

PROF. HERXHEIMER has used arseno-benzol in 72 cases of syphilis without any ill results. He now gives 0.5 gm. and injects it subcutaneously between the scapulæ. Among the 72 were 3 of malignant syphilis. In one the entire scalp was ulcerated and also the hard palate, the pharynx, and tongue. All these healed within 10 days of the injection of 0.4 gm. Gummata were absorbed surprisingly rapidly. The weight rose and the general condition improved almost invariably.

Spirochætes were found in every case before the injection. They disappeared completely within 48 hours of the injection. Wassermann's reaction disappeared in a considerable proportion of the cases.

WECHSALMANN has treated 503 cases with amido-benzol. A point not insisted on by others is that the pain of syphilitic ostitis is removed within a few hours. This evidently coincides with the destruction of the spirochætes. Mucous patches in the mouth vanish within 48 hours even if smoking is continued. The

most refractory to the treatment are hard, shotty cutaneous papules which may persist for 3 or 4 weeks after an injection. The most striking results are obtained in malignant syphilis. Though it is possible that some strains of spirochætes are immune to arseno-benzol, the organisms which escape destruction by the first injection do not acquire immunity, that is, if the first injection fails to cure, a second is indicated in from 1 to 3 months. Nor is increased susceptibility to toxic effects produced. Excellent results were obtained in visceral, cerebral, and laryngeal syphilis. Failure of the pupils to react to light was removed in several cases. In many ways locomotor ataxy and general paralysis of the insane, in its early stages, appeared to be favourably influenced. In none of the 503 cases were bad effects—beyond pyrexia, etc.—observed.

PROF. TREUPPEL lays stress on the necessity of resting for several days after receiving an injection. He insists that the treatment should be reserved for cases in which, though the presence of syphilis has been confirmed by Wassermann's reaction, the discovery of spirochætes, etc., relapses occur in spite of mercurial treatment. The injections may be given in 2 ways: (1) intra-muscularly, half the amount of the required fluid (20 to 40 c.c.) being injected into each gluteal region; (2) intra-venously, for which $\frac{1}{2}$ litre of normal saline solution is required. The intra-venous method has the advantage of producing no local reaction. The reaction of intra-muscular injections consists in slight erysipelatoid reddening of the skin and extensive deep infiltration of tissues. The former subsides within a few days, but the latter persists for some time. The temperature rises and on the third day usually attains 101.8° ; it then gradually falls. With the intra-venous method the pyrexia is usually less. PROF. TREUPPEL has seen no other bad effects and especially none on the optic nerve. As the preparation is excreted more slowly after intra-muscular than after intra-venous injections (12 or 13 days compared with 2 or 3) the results of treatment are probably more likely to be permanent after the former.

The technique of the preparation of the injections is given in detail by WECHSELMAN and LANGE. The earlier method was to rub up arseno-benzol in a mortar with a small quantity of methyl alcohol or glycol. To this was added 10 c.c. of distilled water. As the solution is strongly acid 2 or 3 c.c. of a deci-normal solution of caustic soda are added. Less pain follows the injection if the acid is completely neutralized. An emulsion is then obtained instead of an acid solution. After solution of the arseno-benzol deci-normal caustic soda is run in until a yellow powder begins to be precipitated. The quantity of fluid to be injected

amounts to 25 or 30 c.c. Two c.c. of a 1 per cent. solution of novocain are first injected to lessen pain. This is broadly the method hitherto employed. But LANGE has recently discovered that arseno-benzol is soluble in commercial caustic soda and that the poisonous methyl alcohol may be omitted. The drug is rubbed up in a mortar with 1 or 2 c.c. of commercial solution of NaOH until dissolved. Glacial acetic acid is then added drop by drop until a fine yellow precipitate separates out. This is shaken up with 1 or 2 c.c. of sterile distilled water and the whole is exactly neutralized with a deci-normal solution of caustic soda or a 1 per cent. solution of acetic acid according to the reaction. On the exactness of neutralization depends the amount of pain produced by the injection. The emulsion is aspirated into a syringe and after disinfection of the skin with tincture of iodine the few c.c. of fluid are injected subcutaneously below the scapula. The pain is inconsiderable and there is practically no pyrexia.

The specificity of "606" is regarded as beyond doubt by PROF. NEISSER. But as to whether a permanent cure is obtainable by 1 or 2 injections time has yet to decide. Even with Wassermann's reaction it is impossible to decide between cure and latency under 8 or 10 months. Apart from the disappearance of spirochaetes from primary sores and condylomata within 48 hours and the subsequent absorption of their products the specificity of the drug is shown by the frequent occurrence of Herxheimer's reaction (the appearance within 24 hours of administration of swelling and a bright red areola round previously pale maculopapular syphilides). As to the behaviour of Wassermann's reaction PROF. NEISSER estimates that positive reaction became negative in about 10 per cent. of his cases, all of which were treated shortly after infection. He has observed relapses. This merely indicates that the dose employed (0.3 gm.) was too small. SCHREIBER and others are now giving 0.6 and even 0.9 gm. PROF. NEISSER prefers the intra-venous method, which is painless. The injections are followed by leucocytosis (up to 38,000). His conclusions are that it is possible to eradicate the disease in an early stage by a single injection and that cure will probably be found to be more rapidly obtained, even in advanced ulcerating forms, than with mercury and iodides.

As to the safety of "606," in a leading article in *The British Medical Journal* the number of cases already treated by competent observers in various clinics is estimated at about 3,000. Death resulted in 2 almost moribund infants; in 2 adults with much diseased central nervous systems; and in a fourth adult case. But as EHRLICH has always insisted that the drug is contra-indicated in advanced organic disease—especially

of the central nervous and cardio-vascular systems—the treatment in suitable cases appears to be not dangerous to life.—*The Medical Review*.

Arseno-benzol for Syphilis.

B. SPIETHOFF:—The author has treated 50 cases with the new remedy. The dosage varied from 0.3 to 0.6. His observations as to the time of healing agrees with that of other observers. Chancres healed in about 3 weeks, roseolæ disappeared in from 10 to 20 days, condylomata and moist syphilides were gone within 10 days, mucous patches were cured in 2 to 3 days. In two cases very large indolent glands, which had resisted all other forms of treatment, grew perceptibly smaller within one hour and had almost disappeared in six hours! The Wassermann test was usually still positive 5 to 6 weeks after injection. Spirochetes disappeared from the "irritative serum" 24 to 48 hours after injection.

In a few cases a drug rash was noted soon after the injection. In a case of cerebral lues an epileptic convulsion occurred. Transitory eye symptoms, of no gravity, appeared in a few patients. Tachycardia was likewise noted. No irritation of the kidneys resulted even where previous nephritis existed. Neutrophilic leucocytosis occurs 12 hours after injection and persisted for several days. A few hours after injection a short period of fever, sweating and malaise are the rule. On the second or third day another febrile period regularly occurs. This seems due to the inflammation at the site of injection.

One patient, a woman of 28 years, suffering from syphilis of the throat and marked cachexia, was given 0.6 intra-muscularly. Next morning she was found dead in bed. Autopsy showed stenosis of the upper air passages, cicatrized liver gummata, hypoplasia of heart and aorta. EHRLICH believes this death was due to the shock resulting from pain arising from the site of injection. In case of cachexia smaller dosage is indicated, likewise if non-luetic organic changes (especially circulatory) are present.

By using Michaelis' technic the amount of fluid injected intra-muscularly has been reduced to 9-10 c.cm. of emulsion.—*American Journal of surgery*.

The Treatment of Syphilis with Ehrlich's Dioxy-diamido-arseno-benzol (606).

WILHELM WECHSELMANN:—Visceral lues shows quick recovery, especially syphilis of the testicles and of the brain (epileptoid attacks). Icterus which has existed for a considerable time disappears in ten days. Syphilitic growths of the larynx which had produced such severe dyspnoea

and stridor that the case was received as one for tracheotomy disappeared quickly and remained only as solid infiltrations, which were treated four weeks later with a second injection; and œdema of the larynx, of which we were very much afraid at first, did not occur. Two patients with tumours from cerebral lues stood the injections well, although the symptoms were very severe. The same was the case with two patients who had only lately suffered a luetic apoplexy and a patient with a luetic apoplexy a few weeks old; these three cases plainly showed improvement.

As to the parasyphilitic diseases the author has not observed marked results in cases of progressive paralysis. In tabes a quick improvement has been plainly noticeable. In advanced cases there is little hope for success.

The author has not observed bad after-effects of importance, but it has been found that otherwise light infections, such as those with coryza or angina, even if they appear on the ninth day, are accompanied with very high fever, with a temperature from 104° to 105.8° F. Patients with a weak heart should therefore be carefully guarded; besides, in such cases the injection seems not to be without danger. Otherwise, the influence of the remedy appears generally to be of an exciting and invigorating nature. It can therefore be given with benefit to very miserable patients, as, for example, to the tuberculous, in contradistinction to mercury.

Dioxy-diamido-arseno-benzol is dissolved by triturating in a mortar from 1 to 2 c.c. of a soda solution, when, by adding acetic acid in drops, a fine yellow paste is precipitated. This precipitate is then made sterile and dissolved in from 1 to 2 c.c. of distilled water, and neutralized by the addition of 0.1 normal soda solution or 1 per cent. acetic acid according to a very carefully ascertained reaction with litmus paper. The absence of pain depends upon the exactness of this neutralization. The deposit is centrifugalized and the paste which has been deposited at the bottom of the glass is shaken up with a physiological sodium chloride solution. This mixture is drawn into the syringe and slowly injected subcutaneously below the shoulder blade in a place which has been made aseptic and treated with tincture of iodine. The injection does not produce a sensation of pain, but a few hours later there will occur a nervous pain of varying but not excessive degree. On the third or fourth day there will appear a reactive swelling of a varying degree, sometimes with reddening.—*American Journal of Surgery*.

Unexpected Results in an Hereditarily Syphilitic Nursing after Treatment of the Mother with "606."

R. DUHOT, Brussels:—The mother, aged 22, was treated for 1½ years by means of mercury for an extremely virulent syphilis. During this period almost her entire face was destroyed by serpiginous ulcerations. She gave birth to a live child which showed all typical signs of hereditary lues—appearance of age, deep red color, wrinkled skin, papules, weak cry, snuffles. The first three weeks after birth the child gained only 100 gms. in weight.

As the facial ulcers of the mother were increasing, she received 0.5 and 0.45 of "606" on succeeding days. Two days later the ulcers looked clean, and twelve days after injection they had healed. But more surprising was the fact that on the third day the child's color became normal, the papules disappeared, its catarrh was cured and it nursed well. In the next three weeks the infant gained 1,200 gms. No arsenic was found in the milk.

EHRLICH believes that specific antitoxines are taken in through the milk. He advises against injection of infants with "606" as the destruction of the myriad spirochetes found in hereditary luetics would kill. Only after their number has been reduced, as in the above case, would injection of 0.008-0.01, per kilo, be permissible.—*The American Journal of Surgery*.

THERAPEUTICS.

The Treatment of Haemorrhage In Typhoid Fever.

MICHAELIS has employed high enemata of a 10 percent gelatin solution successfully to arrest severe hemorrhages in typhoid fever, and warmly recommends the method. That's good—worth trying. But don't forget the importance of intestinal rest during these hemorrhages. Atropine is indicated—sometimes morphine also.—*The American Journal of Clinical Medicine*.

Precautions in the Use of Fibrolysin.

DR. STOCKER says that, since fibrolysin acts as a solvent upon cicatrices of any age, it is important, before injecting the remedy, to ascertain whether the patient has a history of having passed through a severe infection. He has observed a case where vaccina-

tion-marks upon the arm, which dated from a vaccination thirty years ago, were considerably inflamed, with production of high temperature, during a fibrolysin treatment for adhesions in the abdomen.

STOCKER calls attention to the importance of being careful in the use of fibrolysin in cases of healed pulmonary tuberculosis and in healed ulcerative processes in the gastro-intestinal canal, because the scars produced by such healing may be affected by fibrolysin and the disease may be reactivated. He cautions against the use of fibrolysin in the conditions named, because, while any other scar which was to be softened by the remedy would undoubtedly be effected, these healed lesions would in like manner be influenced and a new ulcer in the stomach or intestines, or a new phthisical process in the lungs might be produced, which undoubtedly would lead to severe disease.—*The American Journal of Clinical Medicine*.

Favorable Results from Atropine in Diabetes.

RUDISCH has seen surprisingly favourable results in diabetes from treatment with atropine. He employed the sulphate and the methylhydrobromide of atropine. As a rule the dosage of one-third of the maximal doses was sufficient, but as much as 0.003 gram of atropine sulphate and 0.032 gram of the methylhydrobromide three times a day was employed without untoward results.—*Ibid*.

The Treatment of Cholera.

Prof. L. Rogers, F.R.C.P., F.R.C.S.—The writer studied the changes in the blood in cholera in order to obtain indications for treatment. In the mildest cases, not requiring transfusion, he found that an average of one-third of the fluid is lost from the blood; in severe cases, one-half; and in fatal cases, two-thirds. This shows the necessity of replacing the lost fluid in the collapse stage of cholera. Of equal importance is the discovery that there is a great loss of salts. Instead of the percentage of chlorides becoming increased with the concentration of the blood, it remains low, and may be below normal in the worst cases, the loss of salts being in some degree in proportion to the severity of the case. This accounts for the comparative failure of injections of normal saline solution, and is a reason for the use of hypertonic solutions. Raising the salts in the blood appears to check to some extent further loss of fluid, and so hypertonic injections are not so rapidly followed by increase of the watery stools, as usually happens after normal saline injections, with recurrence of the collapse. At the

Calcutta Medical College Hospital this treatment reduced the mortality by one-half, as shown in the table:—

Period.	Treatment.	Cases.	Percentage of Deaths.
1895-1905	Rectal and subcutaneous salines	1,243	59.0
1906	Normal salines intravenously	112	51.9
1907	Rectal and subcutaneous salines	158	59.5
1908-1909	Hypertonic intravenous salines	294	32.6
Aug., 1909 to 1910	Hypertonics plus permanganates	103	23.3

The hypertonic solution consists of 120 gr. of sodium chloride, 6 gr. of potassium chloride, and 4 gr. of calcium chloride to one pint of sterile water, so as to approximate in composition to Ringer's fluid. Burroughs & Wellcome and Parke, Davis & Co. stock soluble tablets of this formula, such that four to a pint make the hypertonic solution (1.35 per cent.), while three in the same amount of water (0.95 per cent.) is suitable for rectal injections. Down Brothers make the writer's stopcock cannula and graduated transfusion bulb for regulating the rate of the flow into the vein. In marked collapse in an adult male with little or no pulse at the wrist, 3 or 4 pints should be given intravenously at the rate of not more than 4 oz. per minute, being slowed at once to 1 oz. per minute if any distress or severe headache is caused. The s.g. of the blood is a valuable guide, as, if it is raised to 1.062 or over, the above quantities may safely be given. If it is not above normal the collapse is probably not due to cholera, and such copious intravenous injections may be dangerous by producing œdema of the lung.

If collapse recurs after a hypertonic injection for cholera the same strength should be repeated. A marked rise of temperature follows these injections, which occasionally goes on to hyperpyrexia. This grave complication occurs most commonly in patients whose rectal temperature is above normal on admission, even if the surface of the body is cold. In such cases the fluid should be given at only just blood heat, or, better, a little below. In a recent case of cholera with complete loss of pulse, an axillary temperature of 101° and a rectal one of 105°, an intravenous injection was given at a temperature of only 86° F., and with external applications of cold the hyperpyrexia was controlled, the circulation restored, and the patient safely tided over the collapse and reaction stages.

Another important fact brought out by the writer's researches is the close relation between continued deficient blood pressure and fatal post-choleraic uræmia. In a large number of cases he found that every adult

whose blood pressure remained continuously below 95 mm. died of uræmia, while if it is raised to over 105 mm. urine was almost invariably freely secreted. Daily manometer observations enabled the danger of uræmia to be foreseen, and by using means to raise the blood pressure the writer has reduced the deaths from uræmia by one-half, and that in spite of having tided many severe cases over the collapse stage by hypertonic transfusions; to face the dangers of suppression of urine. The measures used include rectal, subcutaneous, and occasionally slow intravenous injections of normal salt solution (0.95 per cent.), cardiac tonics, such as digitalin and strophanthin (the latter intravenously), and the vaso-constrictors, adrenalin and pituitary extract. By these means the circulation is usually rapidly restored to such a degree as to lead to the free excretion of the toxins through the kidneys, which is far safer and more satisfactory than the attempt to eliminate them by purgative treatment. Although by these measures the mortality of cholera has been reduced by nearly one-half, yet they frequently fail in the most severe and late cases, and especially in immigrant Europeans, whose attacks are more serious than those of the natives of the endemic areas of Lower Bengal. If collapse recurs after a hypertonic injection, repetitions also often fail to save the patient. In some severe cases the restoration of the circulation by salines is followed by absorption of a lethal dose of toxins from the bowel with high fever, which is always fatal if unconsciousness ensues. Yet to neglect transfusion in these cases is only to allow the patient to die of collapse. Any further reduction in the mortality can result only from some more directly curative means.

Innumerable intestinal antiseptics have been used in vain to destroy the comma bacillus in the bowel. Their failure may be explained in the following manner: The comma bacilli are practically limited to the interior of the bowel, and only penetrate slightly into the mucous membrane. The symptoms are therefore largely due to the absorption of the specific toxins from the intestinal contents. Now these toxins are mainly, if not entirely, intracellular, and are set free from the bodies of the bacilli only after their death and disintegration in the alkaline bowel fluids. Therefore the extensive destruction of comma bacilli by intestinal antiseptics may actually result in the more rapid absorption of the toxins. In agar cultures of 48 hours' incubation only 7.43 per cent., and after 68 hours only 0.8 per cent. of the cholera spirilla present at the end of the first 24 hours are still alive. This tendency of the organisms to quickly reach their maximum numbers, and then as quickly to die and liberate their endotoxins, explains the short but sharp nature of an attack of cholera.

The close affinities in chemical nature and physiological action between bacterial toxins and snake venoms led the writer to test the effects of oxidizing agents on the former. The remarkable power of permanganates in destroying the toxicity of snake venoms was shown by Lacerda as long ago as 1881, and confirmed by Brunton and Fayrer soon after. The writer has found that they have an equally remarkable action in rendering harmless certain bacterial toxins. A quarter of a culture tube of dead cholera bacilli injected intravenously kills pigeons in from 12 to 18 hours. Thrice that amount previously mixed for half-an-hour at blood heat with 3 mgm. of calcium permanganate does not cause death, although dyspnoea may result from the precipitate formed in the mixture. Although in cholera the bowels are completely cleared out of their normal contents, and the watery stools contain little albuminous matter, it is not to be expected that the usual small doses of 2 to 3 grains of permanganate at long intervals, as given in amenorrhœa, can do much in destroying toxins in the small intestine. On coming into contact with unstable animal albumins the oxygen is set free in a nascent form and manganese dioxide precipitated, which appears to be largely inert in the bowel. The writer has given up to 50 grains within a day or two, without indication of any harm, and intends to push it still further in bad cases. The permanganates are given in two ways. First, in solution, to drink *ad libitum* in the place of water. Beginning with $\frac{1}{4}$ to 1 grain to the pint, on account of the unpleasant astringent taste, the strength is rapidly increased up to 4 to 6 grains in 1 pint, or even stronger if the patient will swallow it. Fortunately, in severe cases the thirst is so great that there is no difficulty usually in pushing the drug in this way. Vomiting may occur, but does no harm. On the contrary, it probably helps to remove some toxin. Calcium permanganate is the best salt for this purpose, being somewhat less astringent than the potassium one, while as it is divalent it exerts a greater oxidizing action. The calcium element may also possibly lessen the effusion through the bowel wall. The other method of administration is in pill form, for which purpose the potassium salt is more easily dispensed on account of the very hygroscopic properties of the calcium and sodium compounds. The simplest method is to mix two grains of potassium permanganate with a little kaolin powder and vaseline, and make as small a pill as possible. It is then coated with salol one part, in sandarach varnish five parts, or with keratin so as to dissolve only on reaching the alkaline small intestine. It is important to see that the pills readily dissolve as they sometimes become hard and inefficient after being kept, and may then pass through the bowel unchanged. The

writer gives one pill every $\frac{1}{2}$ hour for the first 2 hours, and then every $\frac{1}{2}$ hour until the stools become green and less copious, which usually occurs in about 12 hours. In mild cases the pills need be given only during alternate 4 hourly periods. Barley-water may also be administered to maintain the strength, as it is not readily acted on by the permanganates. At the beginning of the second day 8 more pills are given, and in severe cases this is repeated on the third day in order to avoid relapses, which promptly yield to renewal of the permanganate treatment.

Administration of permanganates in cholera to destroy the toxins within the alimentary tract was commenced in Aug., 1909. The mortality for a year has been 23.3 per cent. against 34.7 per cent. in the first complete year of hypertonic transfusions alone, and 59 per cent. in the eleven years before the revival of transfusion. Thus, the mortality, which had been reduced by nearly one half by the hypertonic saline injections, has now been reduced by the addition of the permanganate treatment to but little more than one-third of the old rate. That the drug is not very toxic is shown by the following case. A young man swallowed half an ounce of solid potassium permanganate crystals in an attempt to commit suicide. When he came under observation, it was too late to wash any of the salt out of the stomach, yet he made an excellent recovery after only an acute pharyngitis and mild gastritis.

The blood-pressure was taken in every case on admission, and, as a rule, transfusion was performed only if it had fallen to below 70 mm., which means a very feeble or absent pulse. All the other conditions have been the same, except the addition of the permanganate treatment in Aug., 1909. The mortality among cases not requiring transfusion is very small and due to complications.

Clinically the good effects were marked, especially in several severe cases, requiring two transfusions within a few hours. Formerly, in the rare occurrence of recovery such patients remained in a critical condition, with marked toxæmic symptoms, for several days. Under the permanganate treatment they were practically convalescent within 24 hours. The copious rice-water stools were changed to small green evacuations in 12 to 24 hours of admission in collapse, in a manner formerly rarely observed. At the same time, the number of comma bacilli in the stools were greatly reduced. —*The Medical Review.*

OBSTETRICS AND GYNÆCOLOGY.

The Early Diagnosis of Cancer of the Uterus.

By FREDERICK MCCANN, M.D., F.R.C.S.

The surgical treatment of cancer of the uterus has in recent years been considerably improved by more extensive operation. Thus, for cancer of the cervix the operation should consist in the removal of the uterus, broad ligaments, appendages, upper portion of the vagina, and, if necessary, the pelvic lymphatic glands. For cancer of the corpus uteri the uterus, broad ligaments, and appendages should be excised. The abdominal route should be adopted in both cases as it admits of thorough removal. The more extensive operation for cancer of the cervix had at first a mortality of 30—40 per cent., but this is gradually being reduced, and probably 10 per cent. represents the present mortality in expert hands. This will be further reduced when better means are obtained of combating the infection, often streptococcal, to which many patients succumb. The operation should be undertaken only by one who is an expert in pelvic surgery. Accurate hæmostasis is of paramount importance. All bleeding must be arrested at once. It is the continued small losses of blood during a long operation which prove too much for the patient. Moreover, many patients bear blood loss badly, especially if already weakened by previous hæmorrhage, and one cannot say how much more loss of blood they can stand. If this 10 per cent. mortality can be achieved, even in moderately advanced disease, how much better would the results be if the disease were detected early, before there is evidence of infection.

Will the disease recur? The answer depends on the type of the cancer, its situation and character, the rapidity of its growth, and the stage of the disease. The tendency to infiltration varies considerably in different types. At one extreme there is the cancer originating deeply in the substance of the cervical wall, which it rapidly infiltrates, spreading throughout the pelvic lymphatics; at the other there is the cancer originating from the surface of the vaginal portion of the cervix, which grows down into the vaginal canal and does not infiltrate its base of origin until late in the disease. Between these two extremes there are intermediate grades in which the rate of invasion varies. About 20 per cent. of the patients are well 5 years after operation. With improved knowledge of the early signs of cancer still better results are possible.

A thorough operation in the early stages is the great desideratum in the treatment of cancer. Cancer of the corpus when treated by abdominal hysterectomy in its early stages yields a good prognosis; when advanced, the results are bad. Unfortunately in the earliest

stages of cancer of the uterus there are no symptoms, and so the disease escapes notice unless discovered accidentally. The earliest symptom is a serous discharge, or if the patient has been subject to leucorrhœa there is an alteration in its character; it becomes more watery. If injured, the growth bleeds; or a tiny vessel may rupture as the result of a strain or in consequence of superficial ulceration, the discharge becoming streaked with blood. Bleeding is, however, *the sign* which attracts the patient's attention, and if it exists to any extent it means that the disease is well established. The bleeding may be irregular in onset or may occur after coitus, an injection, or vaginal examination, and in the early stages of cervix carcinoma it is inconsiderable. Cancer of the uterus is at first painless; pain, if severe and continued, indicates advanced disease. Slight bleeding is, as a rule, disregarded by the patient. If, however, the bleeding becomes increased or continuous she becomes alarmed and seeks advice. Pain, if at all marked, prompts the sufferer to seek relief at once, but many women do not seek advice until the disease is advanced, because it is at first painless.

When a patient presents herself, careful inquiry should be made into the history and special attention paid to the following:—

- (1) Discharge—quality, quantity, and duration.
- (2) Bleeding—duration and quantity.
- (3) Pain—situation, character, and duration.
- (4) Wasting—duration and amount; exact weights if obtainable.

Discharge.—A foul discharge is a late symptom, and, when infection of the growth has not occurred, may be absent for a long time. It increases the risk of operation. Therefore in the examination, the hands should be carefully cleansed, or, better, sterilised finger stalls or a rubber glove should be worn. The onset of a foul discharge often dates from an examination. In multiparæ with a gaping vulva the growth becomes readily infected; another source of infection is the injection syringe. Where the vulva is not gaping and the growth is protected from external contamination, it may occasionally assume large proportions without any foul discharge. In cancer of the body of the uterus a very foul discharge is exceptional, the characteristic being a watery discharge tinged with blood. When the cervix is affected, some discharge usually occurs before the onset of bleeding, whilst in cancer of the body of the uterus not infrequently there may be no previous discharge. Sometimes discharge accumulates *in utero* (pyometra). This is not uncommon when a cervical cancer blocks the exit of the uterine secretion, but it also occurs in disease of the uterine body. The collection of pus becomes diminished or evacuated at intervals by gushes of discharge.

Bleeding.—When a cervical cancer is injured from any cause it bleeds, and the amount of bleeding is, as a rule, out of proportion to the injury. The bleeding *post coitum* may be slight or it may be excessive, depending chiefly on the stage of the disease. In cancer of the uterine body the bleeding may be profuse, but as a rule, it is slight, only colouring the discharge. As the majority of the cases occur between 40 and 50 the bleeding is regarded by the patient as due to the menopause. Excessive hæmorrhage at the menopause should be looked upon with suspicion, and an examination made without delay in order to determine if cancer exists. Bleeding, however slight, after the menopause should be regarded as due to cancer until the contrary has been proved. If these two simple rules were always followed many more cancers would be discovered early. Irregular bleeding of any description during menstrual life should receive immediate attention and a thorough examination should be made.

Pain.—Cancer is at first painless: well established pain indicates advanced disease. When the cervix is affected the pain may be of a dull, aching character, and is referred to the sacral region. With the invasion of the connective tissue there appears a constant dull aching in the hypogastric region, in the sacral region, and extending down the front and back of the thighs. As the disease progresses still further, vesical pain is felt, accompanied by frequent micturition. Therefore inquire into the character and frequency of micturition. Severe rectal pain also develops, and is aggravated by defæcation.

In the majority of cases cancer of the uterine body is for long painless; pain indicates advanced disease except in the polypoid form. Probably the pain here is caused by uterine contractions attempting to expel the growth. When there is a diffuse growth in the uterine cavity, pain is not felt until the muscular wall is deeply invaded or the cavity is distended by retained secretions.

Wasting.—Another fallacy concerning cancer is that wasting is always present. Both in cancer of the cervix and in cancer of the corpus increase in weight may occur during the early stages; so that increasing stoutness does not negative cancer. If there be no pain, no excessive bleeding and no foul discharge, the appetite remains good, and sleep is not disturbed, weight may be gained. The "cancerous cachexia" belongs to the late stages and is due to septic absorption from the foul discharges, continued pain, loss of blood, and loss of sleep. The septic element is important: for, if disinfectants are used to control the factor, there is a marked improvement in the patient's condition. It is curious how many women afflicted with uterine cancer are obese; especially when the corpus uteri is affected. Indeed it is the exception to find a spare woman suffering from the latter disease. This is difficult to explain.

When any of the above symptoms exists, a careful examination should at once be made, even if bleeding is going on. Otherwise valuable time may be lost. In the abdominal examination note the condition of the liver, for in advanced uterine cancer metastases are not uncommon. These at once indicate that the disease is inoperable. A vaginal examination is then made, aided by the speculum. The vaginal portion of the cervix is first examined. Is there any growth from its surface or in its substance? Is it irregular and nodulated, or is a definite ulcerated area to be seen or felt? If there is a growth, is it friable, *i. e.*, can portions of it be crushed between the fingers, and does this friability extend into the substance of the portio vaginalis? Is there hæmorrhage out of proportion to the amount of injury inflicted? Friability is a sign of great importance, and may be tested by the finger-nail, curette, sound, or ordinary long probe; but the degree of friability varies with the amount of interstitial tissue present in the growth. If one or both lips of the cervix are considerably enlarged, pressure upon them may cause a number of yellow points to appear on the surface, which are cancer masses squeezed out from the surrounding tissue. Friability will also be detectable in the enlarged cervical lips and this manipulation will cause free bleeding.

When true ulceration is discovered—that is, a definite loss of substance—and traumatism can be excluded, the ulcer will be either tuberculous, syphilitic, or malignant, and in 90 per cent. it will be the last. True ulceration is a most important sign, as in some of the earliest cases a small ulcer has been the first local change discovered. Some confusion has arisen from confounding the so-called “ulcer of the cervix,” or erosion, with true ulceration. The cervical erosion, which is a new growth composed of glands and interstitial tissue, is, pathologically, an adenoma, and is quite distinct from a true ulcer. It is true that certain pronounced types of erosion may cause difficulty in diagnosis, but a careful inspection will serve to distinguish these two conditions. An erosion is bright red, surrounds the os externum, fades away on the surrounding tissue, epithelial islets may be seen on its surface, and it is associated with a catarrhal condition of the cervical canal. A malignant ulcer in its early stages is situated to one side of the os externum; it is definitely circumscribed. Epithelial islets are never seen on its surface, *i. e.*, no attempt at healing, and it is friable, indicating infiltration of subjacent tissue. A hypertrophic or cockscomb-like erosion is also friable when tested with the fingers, but it does not infiltrate its base of origin and the subjacent tissue is not friable.

One or both lips of the cervix may be thickened and nodular from the presence of cystic dilatations, the so-called Nabothian ovules; but these are apparent through the speculum, and when punctured, the characteristic glairy fluid escapes. Considerable thickening of the cervix

may occur in association with well marked erosion and cervical catarrh. In such cases the erosion should be excised or, if necessary, the cervix amputated. This treatment is much better than caustic applications and may prevent the development of carcinoma.

If the portio vaginalis is healthy the hæmorrhage must be coming either from the cervical canal or the body of the uterus. The cervix proper should next be examined, beginning with the cervical canal. When the os uteri is open, admitting the finger-tip, the cervical canal may be explored. Soft friable growth may be discovered, which bleeds readily, and pieces may be brought away on the finger-tip. When this occurs, there is little doubt that the disease is malignant. Should the os externum be not sufficiently patulous to admit the finger, it will be necessary to explore the canal with a sound or curette. If the sound penetrates even with gentle pressure into the cervical walls, it suggests infiltration, and the curette will remove pieces of growth. Partial destruction of the rim of the os externum suggests a malignant process. The majority of cancer cases which are overlooked are examples of disease beginning in the cervical canal. The vaginal portion having been felt to be unaffected the hæmorrhage is treated medically without further investigation.

The disease may not be evident in the canal but in the substance of the cervical walls. The cervical walls are enlarged, hard, cartilaginous, and the cervix is of an angry livid colour, which, in the absence of pregnancy, should suggest infiltration of the cervical walls. Rectal examination is then most useful in order to determine the relative size of the cervix to that of the uterine body, considerable enlargement of the cervix being found. This is a type of cancer frequently overlooked, and as its tendency is towards rapid infiltration, early diagnosis is specially needful.

The cervical canal and cervical walls having been proved to be healthy, it is now necessary to examine the interior of the uterus, which may be done by the uterine sound, the curette, or, after dilatation of the cervix, with the finger. For this examination an anæsthetic may be required, especially in an elderly virgin; but it is best in such cases to obtain the patient's consent to do what is necessary should the disease prove to be malignant, and so avoid the necessity for a second anæsthesia. Moreover, it is not good practice to scrape or cut a malignant growth unnecessarily, and, what is so frequently advocated, *viz.*, the digital exploration of the uterus, should not be lightly undertaken. It involves too much laceration of the uterine tissues, with the consequent dangers of septic and epithelial infection. All the information necessary may be obtained by gentle use of the curette and a piece or pieces of growth obtained for inspection and microscopic investigation. The sound or curette will furnish information as to the

character of the interior of the uterus, the presence or absence of elevations or polypoidal masses, and as to whether the wall is infiltrated with growth. In testing the latter, great gentleness must be used lest the uterine wall be perforated. If the whole mucosa is smooth, this is against cancer, but a more extensive scraping may be done, in order to make sure that no area has been overlooked. Special attention should be paid to the region of the tubal orifices, for there cancer frequently commences. The amount of hæmorrhage following any manipulation is also important.

When the uterus is felt bi-manually there is frequently nothing detected which would suggest the presence of disease. There may not be any enlargement; indeed, cancer may originate in the body of an under sized uterus. If there is enlargement, it is in the early stages uniform, regular, and painless, but the consistence is not infrequently softer and has been compared to the feel of a water cushion. Advanced cases may exhibit bosses on the peritoneal aspect and there may be considerable uterine enlargement. The uterus may reach to the mid-point between the umbilicus and the xiphi sternum.

An intra-uterine growth extending downwards may protrude through the external os and give rise to the impression that the disease is originating in the cervix. Such growth is friable and bleeds readily. It might also be confounded with a sloughing fibrous polypus, but although this is also friable, when the pieces are examined the individual fibres may be distinguished. Further, the ring of the external os is healthy and a stalk or pedicle can be palpated.

Cancer of the body of the uterus was formerly stated to be relatively rare, but, whether owing to improved diagnostic methods or an increase in the disease, it is now found much more frequently. It is, further, more common in nulliparæ than cancer of the cervix, which is relatively rare. Multiparæ suffer equally with nulliparæ from carcinoma of the corpus, but the number of children borne by the multiparæ is below the average. The duration of the disease appears in many cases to be longer than in cancer of the cervix, and the prognosis after operation is better.

The microscope plays an important role in the diagnosis of early cases of uterine cancer and in doubtful and suspicious cases. If there be a suspicious hard nodule or erosion or ulcer on the external os uteri, a piece the size of a pea or bean with a boundary of healthy tissue should be excised. If the portio vaginalis be intact and there is uterine bleeding, sufficient material for examination may be obtained with a curette or sharp spoon. The pieces should be sent to an expert for report. If the report is favourable the patient will be reassured; if unfavourable, immediate operation is imperative.

Early cancer can be cured by operation. Never treat cancerous ulcers with caustic; their appearance becomes masked and valuable time is lost. It is an error to wait and observe in order to arrive at a diagnosis. In doubtful cases a diagnosis must, and can be, made in a few days.—*The Medical Review.*

THE ANTISEPTIC.

DECEMBER, 1910.

Rest in Diabetes Mellitus.



WE need not draw the attention of our readers to the widespread prevalence of Diabetes Mellitus in this country, especially among the richer classes of the people. Every medical man who practises his profession in India knows it. But we are afraid that many of us are rather indulgent to our rich patients and do not impress on our diabetic patients, to the extent that we ought to do, the value and importance of rest—both muscular and mental—in diabetes. The idea that sedentary habits act as predisposing cause to diabetes has led to the general recommendation of physical exercise as one of the treatments for this disease. We do not here intend to go into the question of the etiology of diabetes mellitus. But the fact that the women of the richer classes of people in India enjoy comparative immunity from diabetes in spite of the fact that they partake of the same rich carbohydrate food as their husbands and fathers and brothers do, and are if anything at all a little more sedentary in their habits than their male relations, has shaken our belief in the correctness of some of the etiological factors which are usually put forward to account for the general prevalence of diabetes in India. But without going into that question now and while conceding the value of physical exercise in the obese diabetic as well as in the early stages of that disease, we wish to draw the attention of our readers to the dangers of muscular fatigue, great mental exertion, nervous shock and exposure to cold in the advanced diabetic patient. The vast majority of diabetic patients in this country come under the observation of medical men in a fairly advanced stage of the disease. Many of them are brain workers, and we are of opinion that medical men do not often emphasize the necessity for mental rest in these cases. With a few general directions as to diet and with a prescription or two for some tonics and laxatives, the patient is permitted to go on with his work—very often the hard work of a judicial officer—with no warning as to the danger that lies in his path. We confess that in some cases warnings too are of no avail, for the patient follows all his doctor's directions except the one relating to rest. The result is that we often hear of the sudden death of some well-known personage or other and the public are left to wonder at the cause of death of an official whom only a couple of days ago they

saw hard at work at his post of duty. They are entirely ignorant of the fact that probably the very fact of the man having worked so hard may have contributed to accelerate the end. "It is only too true that the life of a diabetic hangs by a thread," says Professor Saundby, "and we cannot be too careful or too persistent in our warnings. Above all we should not allow cases of advanced diabetes to travel; too many of those who go to foreign health resorts in the hope of finding a cure, die of coma very soon after their arrival." That is Professor Saundby's experience of the European diabetes. In India we have not much trouble with the travels of our diabetics, for as a rule they don't travel much. Our difficulty here is to prevent them from doing hard brain work. In our experience the hardest thing to impress on an Indian patient is the necessity for rest in certain diseased conditions. If you advise a student to take immediate rest because of some disease he is suffering from, he will quietly tell you that he will take the rest you recommend after his examination is over. If you suggest immediate rest for an active judicial officer he will ask you whether it cannot be postponed till his next court vacation. We do not say that it is in the power of medical men to change all at once this habit or frame of mind or whatever else you may call it. But we do say that it is the duty of medical men to put before their patients strongly and clearly the risk that they run in continuing to work when they ought to be taking absolute rest.

Speaking particularly of diabetic patients, open air life and abstinence from pursuits or exercises requiring strenuous exertion or involving great effort, regulation of diet and keeping the bowels free are all generally attended to. But we don't think that abstinence from mental work is generally observed. We have seen many disastrous results arising from the neglect of this simple precaution and we have thought it necessary to sound a warning. It is our duty to give advice. The patient may disregard it at his own risk.

BOOK REVIEW.

"Squint and Ocular Paralysis" by E. Lucas Hughes, M. R. C. S., (Eng.), L. R. C. P. (Lond.) H. K. Lewis; 136, Gower St., London, W. C. (6/6 net.)

The author has placed before us an attractive and clearly-written book embodying the present-day knowledge on Squint (Part I), Ocular Paralysis (Part II), and Disturbances of Muscle Balance (III). The treatment of squint has undergone a change from the mechanical and short-sighted methods of indiscriminate 'tenotomies' and

'advancement' operations, to the rational methods of correcting these defects by an intelligent investigation of the underlying pathological causes. Indeed, it would now appear that, to shorten an ocular muscle by advancement would be something like hastening to shorten a leg—(if that were attempted)—where one of the lower limbs seems longer because of an undiagnosed hip dislocation! In squint, the retinal sensitive area of, say, one eye cannot be brought into the optic axis, without producing an unbalancing of the opposing muscular action in the orbit. Purely mechanical corrections of the muscular insufficiencies may, for the time being, remedy the want of symmetry from an outsider's point of view; but to the possessor of the squint eye this dramatic exhibition may not be of much use, unless an error of refraction is corrected, and the fusion faculty gradually acquired by training, as by means of the stereoscope or "amblioscope." The non-operative treatment of squint by means of these orthoptic exercises preserve vision, give rise to no amblyopia, and none of the after effects of an operation at an early age. As regards the ocular paralysis, the author details the various causes of these, and indicates their proper treatment clearly.

We think the book a valuable one; and we have no doubt of its proving of use in India where, fortunately, the patients are not very many who submit to an operation for squint. The illustrations of the author would be very helpful; and some of the tests are also beautifully illustrated.

CORRESPONDENCE.

Government Order about Opium and Cocaine.

SIR,

Lately, the Government of Madras has been pleased to pass an order virtually prohibiting the non-degree holders in the profession from prescribing opium and cocaine and their preparations. I, as one of them, beg to express my regret at the action of the Government, and that, at a time when, in spite of special protests from about half the profession, they themselves have proclaimed us as qualified to be included in the List of Medical Practitioners and have accordingly changed our designation to the well-meant one as the old one of "Hospital Assistant" went to mean almost nothing of our profession. When we, the mute and humble, but the most hard-worked among the subordinates in the department, just begin to feel a little pride in being Government servants, as the Government publicly appreciated our obstinately loyal services, we have been suddenly roused to realise and feel our helpless position in the profession by the present blow aimed from our sides. Opium and

cocaine are so commonly necessary in medical practice that I need not express to you the helplessness a practitioner may feel if he be disauthorised to prescribe them and their preparations.

Of course the G. O. provides that we can be authorised to do so by the District Medical and Sanitary Officer. This clearly means his action, if he authorises every one that applies to him, will not be countenanced and that he too will never authorise all that come to him. Further the D. M. and S. O. is not merely an administrative officer like the Surgeon-General. He also is a medical practitioner having to compete in private practice with his own subordinates and as such he is not quite disinterested. I do not mean every D. M. and S. O. may bring in his personal interest in the dispensation of the new boon in his hands; there may be many that may not; yet, there will be some at least that may. Already many a subordinate in the district does suffer very much at the hands of some of the D. M. and S. O.'s because of the above position, and now such of them have another boon in their hands to withhold from those that are not within their smiles.

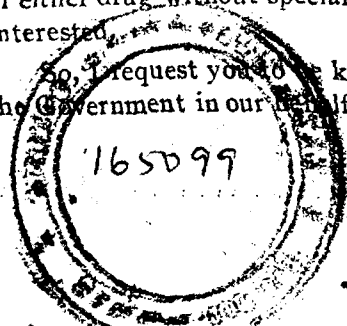
Further, at a time when we were not considered fit for a well-meaning designation or for better remuneration no such restriction was found necessary. Now when the Government realised the present state of things different from that of old and is proceeding boldly to show they do realise it, it is surely a very retrogressive and ill-advised step to have prohibited to us the use of the most necessary drugs.

I do not think the Government would have passed this order if all the aspects of the question were presented to them. There is some interested influence behind the curtains that has caught the Government by the hand to serve some personal ends.

Still there is another side. The G. O. affects only us, the number of Military Assistant Surgeons and Civil Apothecaries being too small when compared with our number. Even the quack in the street is not covered by the G. O. He (the quack) can boldly send for opium up to three tolas (more than an ounce) and cocaine up to six grains, and 25 grains in the form of solution, without the least fear of being challenged by anybody. But we, possessing full qualifications, cannot prescribe for the relief of the patients, for whose sake our department (of 500 of Sub-Assistant Surgeons) is maintained by the Government, even a grain of either drug without special authority from one who cannot but be interested.

So, I request you to be kind enough to take up the matter to move the Government in our behalf with a view to have the order cancelled.

"Sub-Assistant Surgeon"
in the Mofussil.



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