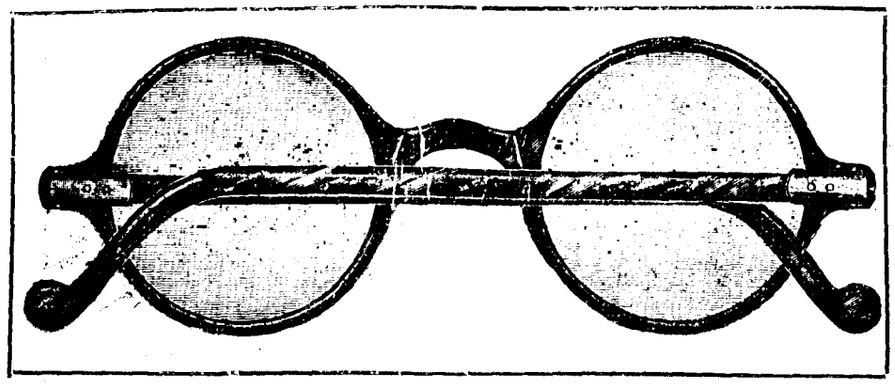
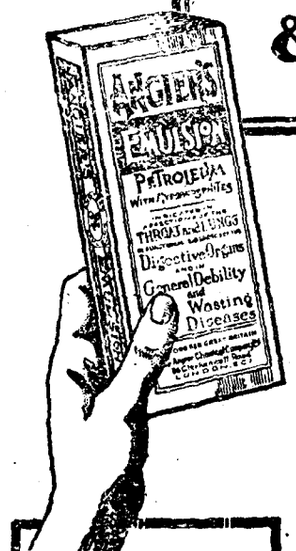


After Malarial & Enteric Fevers



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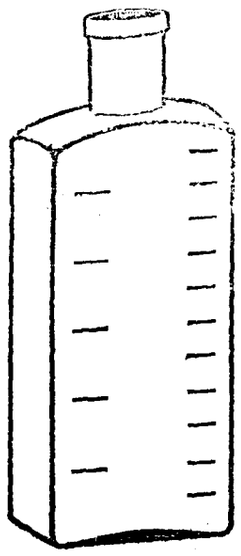

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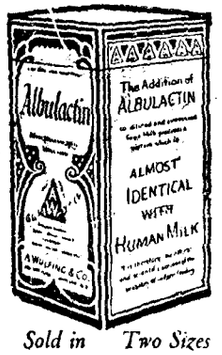

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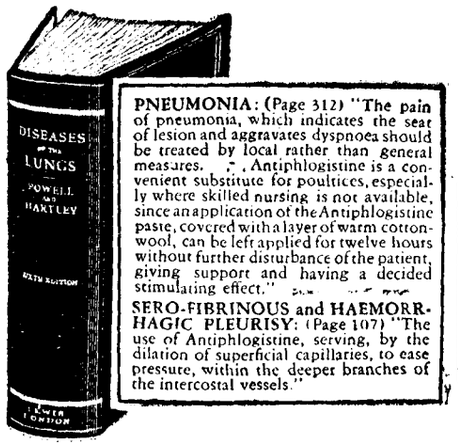
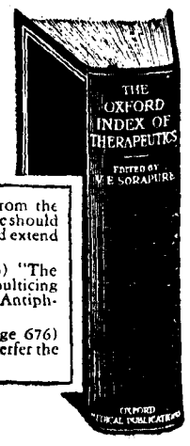


PNEUMONIA: (Page 312) "The pain of pneumonia, which indicates the seat of lesion and aggravates dyspnoea should be treated by local rather than general measures. . . . Antiphlogistine is a convenient substitute for poultices, especially where skilled nursing is not available, since an application of the Antiphlogistine paste, covered with a layer of warm cotton-wool, can be left applied for twelve hours without further disturbance of the patient, giving support and having a decided stimulating effect."

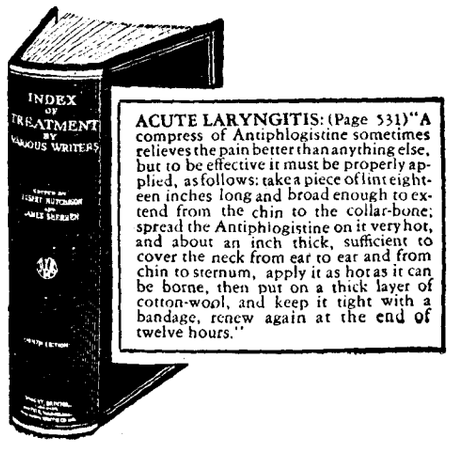
SERO-FIBRINOUS and HAEMORRHAGIC PLEURISY: (Page 107) "The use of Antiphlogistine, serving, by the dilation of superficial capillaries, to ease pressure, within the deeper branches of the intercostal vessels."



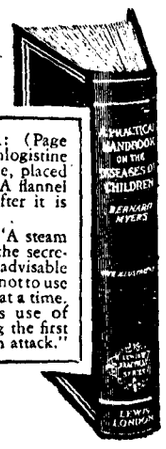
PNEUMONIA: (Page 718) "From the onset of the attack Antiphlogistine should be applied. The poultices should extend from the spine to the sternum."

DRY PLEURITIS: (Page 715) "The most effective local measure is poulticing . . . . . we may use a thick layer of Antiphlogistine."

ACUTE BRONCHITIS: (Page 676) "Poultices: Many practitioners perfer the use of Antiphlogistine."

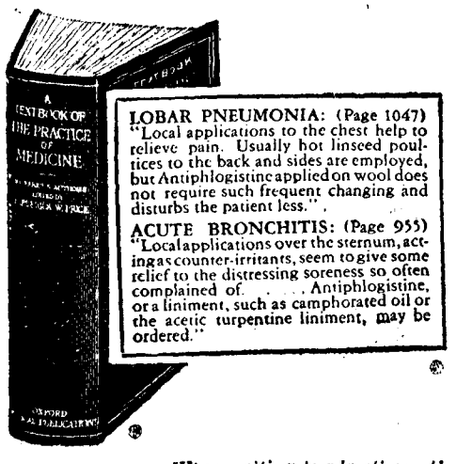


ACUTE LARYNGITIS: (Page 531) "A compress of Antiphlogistine sometimes relieves the pain better than anything else, but to be effective it must be properly applied, as follows: take a piece of lint eighteen inches long and broad enough to extend from the chin to the collar-bone; spread the Antiphlogistine on it very hot, and about an inch thick, sufficient to cover the neck from ear to ear and from chin to sternum, apply it as hot as it can be borne, then put on a thick layer of cotton-wool, and keep it tight with a bandage, renew again at the end of twelve hours."



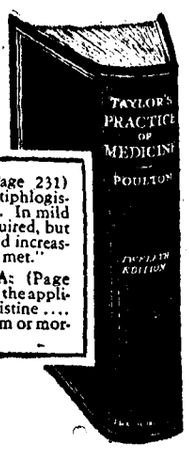
BRONCHO-PNEUMONIA: (Page 332) "In the early stages Antiphlogistine is sometimes distinctly valuable, placed only on the front or the back. A flannel jacket had better be worn after it is removed."

BRONCHITIS: (Page 324) "A steam kettle is only suggested when the secretion is scanty, but distinctly inadvisable if copious and loose; it is better not to use it for more than half an hour at a time. Antiphlogistine, the judicious use of poultices in certain cases during the first few days will often cut short an attack."



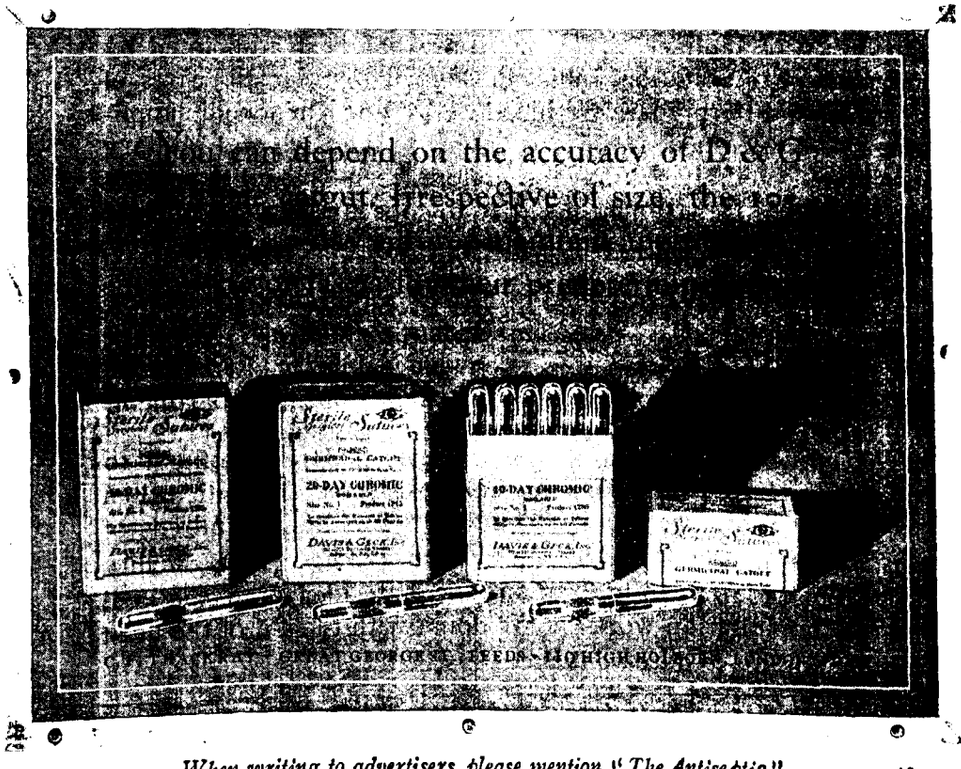
LOBAR PNEUMONIA: (Page 1047) "Local applications to the chest help to relieve pain. Usually hot linseed poultices to the back and sides are employed, but Antiphlogistine applied on wool does not require such frequent changing and disturbs the patient less."

ACUTE BRONCHITIS: (Page 955) "Local applications over the sternum, acting as counter-irritants, seem to give some relief to the distressing soreness so often complained of. . . . . Antiphlogistine, or a liniment, such as camphorated oil or the acetic turpentine liniment, may be ordered."



LOBAR PNEUMONIA: (Page 231) "Local applications such as Antiphlogistine . . . . . may also relieve pain. In mild cases this may be all that is required, but in the severer cases delirium and increasing prostration will have to be met."

PLEURISY and EMPYEMA: (Page 264) "Pain may be alleviated by the application of poultices, Antiphlogistine . . . . and the administration of opium or morphia subcutaneously."



Major-General T. H. Symons—A short sketch.

Thomas Henry Symons was born on the 17th of June 1872. He joined the Indian Medical Service on the 29th January 1896 and arrived in Rangoon in April of the same year. After five years of military service he was posted in the year 1901 to the Madras General Hospital as the Resident Physician and the third Surgeon. He was later on R.M.O. and 4th Physician in the same place. In 1907 he was made 2nd Surgeon and Prof. of Anatomy which appointment he held till 1914. During the great war between the years 1914-1919, Major Symons was temporarily placed at the disposal of the Government of India for employment on the Hospital Ship "Madras" as Chief Medical Officer in charge. At the end of the world war Lt. Col. Symons's name was among those mentioned for valuable services rendered. When he returned in the year 1920 Lt. Col. Symons was made the 1st Surgeon and the Superintendent of the Government General Hospital. At this time he was also Professor of Surgery and the Principal of the Madras Medical College. He was made an Honorary Surgeon to the King in 1924 and soon after became the Surgeon-General with the Government of Madras on the retirement of the late Sir G. G. Giffard. He has now been appointed Director-General of the Medical Services in India—an honour which has come for the first time to an I. M. S. Officer in the Madras Presidency.

The Antiseptic

Vol. XXIII No. 3. | MARCH, 1926. | ANNUAL SUBSCRIPTION Rs. 5

ORIGINAL ARTICLES.

*RECENT ADVANCEMENT IN THE TREATMENT WITH IODINE, WITH SPECIAL REFERENCE TO THE INTRAVENOUS METHOD

By

KHAGENDRANATH CHATTERJEE, M.B., CHINSURAH

Iodine or its compounds have been used in medicine and surgery with great success from a very long time. Its powerful antiseptic properties and almost specific action in diseases like tertiary syphilis, asthma and various others, either by local application, or by oral administration, are too well-known to the scientific world, to be described anew, but the recent introduction of the method of administering the drug, through the vein, directly into the circulation, has been a greater success, and has widened the scope of the medicine, hitherto unknown.

HISTORY.

It is difficult at present to say who made the original attempt, but from the study of literature it is known that it has been tried by various workers, in this country as well as in Europe, as early as the beginning of this century. In India, Connor tried it in the year 1910, in cases of Bubonic plague, with highly gratifying results. Other workers also attempted the method, in different diseases, independently of each other, in various provinces.

INDIAN PIONEERS.

The names of Porter, Connor, Jeudwine, Wadhwani Chaudhuri, Bhattacharjee, and Mukherjee, Bayley De Castro, may be mentioned as pioneers in the work. A brief account of the valuable work done by them, will be narrated later on.

*Specially contributed to "The Antiseptic"

It cannot be, however, precisely said when the attempt was made in Europe, or elsewhere.

INVESTIGATIONS IN EUROPE.

Col. F. P. Connor, I.M.S., in his paper which he read at the Medical Section of the Asiatic Society of Bengal on the 12th Dec. 1923, gives us some light into the subject. He says as follows: "I had no previous knowledge of the effects of intravenous Iodine in man, but I was able to ascertain, through the kindness of the late Sir Lauder Brunton, Bart., that experiments with *large* doses of Iodine, on direct injection into the blood-stream, had been made by Boehm and Berg. Also that Davaine had found, that when added to septicæmic blood, Iodine destroyed the infective quality in the proportion of 1 in 10,000. Somewhat similar results were obtained by Krajewsky in anthrax cases." Major Porter, R.A.M.C., also tells us in the May number of the I. M. G., 1921, how an American Physician named Stokes treated cases of Influenza with Sodium Iodide intravenously in 15 gr. doses, diluted with 20 c.c. of distilled water, in 30 cases, and none of them developed pneumonia. He also informs that Dr. Baillie in England used Iodine intravenously in influenzal broncho-pneumonia. He (Dr. Baillie) gave 20 to 30 minims of the B. P. Tincture of Iodine diluted with 9 c.c. of saline in these cases. The therapeutic effect was shown in 24 hours, by a marked fall in the pulse-rate and temperature, and also a great improvement in the patient's condition. We shall see later on, how this same treatment has been carried out in this country with equal success.

DISEASES IN WHICH INTRAVENOUS IODINE HAS BEEN TRIED.

Before proceeding with the subject, in its details, it will be better, perhaps, to mention the various diseases in which Iodine has been tried intravenously. The diseases are mainly classified into two groups, surgical and medical.

SURGICAL.

Of the former, we may name from the simplest type of pyogenic infections to the gravest forms of septicæmic conditions, in which Iodine injections have been given, and we shall see afterwards, how the simple boil and the carbuncle, as well as the serious cellulitis, pyæmic abscesses, phagadenic ulcers and sloughing wounds, have all been equally benefitted with them. Even specific infections such as the Erycipelas, Bubonic plague, the venereal sores have also been surprisingly abated with Iodine injections. In one word, all inflammatory affections and septic conditions have been promptly and effectively relieved with this new method of treatment.

MEDICAL.

In some medical cases too, these injections have been tried, namely in the fevers, lung troubles, and the arthritis group. Here the success has not been uniform as in the surgical affections, but marked results have still been obtained in some diseases, which deserve special mention. The *typhoid fevers* and the pneumonia group have been especially benefitted, *whilst malarial fevers and kala-azar have not.*

A BRIEF SURVEY OF REPORTS OF CASES SENT BY VARIOUS MEDICAL MEN.

A brief sketch of some of the interesting cases actually treated and relieved with Iodine injections, will now testify to what have been said above. I like to say here, that all my illustrations have been gathered from the Indian Medical Gazette, in which I have found these reports being published, systematically year after year. I do not know if such reports have appeared on the same subject in other medical journals, and if they have been, they will no doubt corroborate my statements made in this paper.

Case No. 1.—Dr. S. R. Bhattacharjee wrote in Feb. 1921 in the Gazette, from Manipur State, Assam, where he was the Chief Medical Officer, as follows:—

"I have recently had such unmistakably good results in various septic conditions, with intravenous injections of Tinc. Iodine, that I feel encouraged to send an account of my cases. The effect of the drug has been observed in 18 different cases, 3 of mauling by leopards, one of cellulitis, 10 of syphilis and 4 of malaria."

* * * *

Case No. 2.—Dr. Bayley De Castro, Medical Officer, Port Blair in Oct 1921 wrote thus:—

"I plead no originality for this line of treatment for I have only systematically adopted it since Nov. 1920, but having had some very novel and highly gratifying results, I take the liberty of writing this article. In the Andamans, ulcerative processes of various gradations from the simplest type to the most phagadenic ones are very common. These at first quite baffled me. I then started the use of Tinc. Iodine intravenously, m. v. in 1 c.c. of normal saline, and going up to m xx in 10 c.c. In bad cases, the injections were given every day, and in ordinary cases, every second day. The changes noticed within 36 to 48 hours were most marked. An unhealthy-looking surface freshens up, and takes on a nice healthy look, sloughs are cast off, profuse discharges of pus stop, and healthy granulations start to shoot up. If there is concomitant pyrexia, the temperature falls normal, and pain disappears. The blood picture is also very interesting, the white cell-count mounting up from a few

thousands to 15, or 20,000 or more. Thus an extremely rapid hyper-leucocytosis is produced."

I have also, since February been using Iodine injections in cases of malaria but have found it a miserable failure in this affection.

3. In the July No. of the Gazette, 1923, Dr. N. Brachio, Civil Surgeon, Birbhum, wrote, that he tried the method systematically in cases of malaria, kala-azar, and small-pox. In the former diseases, he obtained satisfactory results, though they might not be complete cures, but in small-pox, it is a sovereign remedy, as he found it. In this connection, it may be noted here, that a trial of Iodine injections in malarial and kala-azar fevers, was given in the Calcutta School of Tropical Medicine, but the results were disappointing.

DOG-BITE CURED.

4. In November 1923, Dr. Phani Bhusan Mukkerjee reported from Darbhanga, Behar, how he cured a case of dog-bite with Iodine injections. He wrote as follows:—

"My first case was a Mahomedan girl of 10, who was attacked by a rabid-dog, and was badly mauled in the face. Bearing in mind the prime importance of sending each and every case of dog-bite to Kasauli for treatment, I referred the case to the Sadar Hospital, but as the guardians of the patient refused to send her, I was reluctantly compelled to take her for treatment. ½ c.c. of B. P. Tinc. Iodine was administered intravenously undiluted daily for first 4 days, and then on every 4th day, up to second week; subsequently twice a week for the remaining six weeks, during which time the patient was kept under observation, for the appearance of hydrophobia. Fortunately, however, the signs and symptoms of the latter never appeared."

5. The most elaborate and useful article that appeared in the Dec. Number of the journal of the same year, on the subject, was from the pen of Lieut.-Col. Jeudwine, Civil Surgeon, Delhi. He based his paper on three years' experience on 400 cases, of diverse diseases. He grouped his cases, according to the class of illness, and has given an excellent note of the results of his investigations. It is not possible to reproduce the lengthy notes here, but a general outline may be attempted instead. A perusal of the said article will rather be more profitable. Col. Jeudwine classified his cases as follows:—

EYE.

A.—Corneal ulcers and after cataract—

Treated 24 cases, 24 cured; 8 cases, 8 cured.

CARBUNCLES, ETC.

B.—1. Carbuncle. Cases 6. Healed 6.

2. Chronic Ulcers. Cases 24. Cured 24.

3. Cellulitis. Cases 7. Cured 7.

VENEREAL GLANDS AND OTHER GLANDS.

C.—1. Inflamed glands in the groin (probably venereal) cases 2 { Cured 1. Improved 1.

2. Tubercular glands, neck. Early cases improved.

ARTHRITIS.

*D.—1. Chronic arthritis. Cases 6. Some improved.

2. Rheumatism. Cases 3. Results not known.

PLAGUE.

E.—Bubonic plague. Early cases are benefitted.

SEPTIC LUNG.

F.—1. Septic Lung. Treated 4. Cured 4.

2. T. B. Lung. { i. Incipient stage. ii. Advanced stage. iii. Very advanced stage.

(In the above disease, Col. Jeudwine gives detailed accounts of cases, how some of them improved greatly, their symptoms were abated, temperature lessened, distressing cough diminished, and they gained in weight. The descriptions are really very encouraging.

3. Chronic bronchitis. Marked improvement.

4. Pneumonia. Satisfactory results.

5. Asthma. Disappointing results, but cases were few.

Perhaps the most striking results that have been obtained with intravenous Iodine, are in the cases of Dr. Wadhwani and Dr. Chaudhuri, which have been reported in the August and November issues of the Gazette, respectively, in the year 1924. The cases of Dr. Wadhwani M.B., B.S., Sind, are as follows:—

PHLEGMASIA ALBA DOLENS, ERYSIPELAS, PERITONITIS, ETC.

1. Phlegmasia alba dolens, 2. Erysipelas of the scalp and face. 3. Pelvic peritonitis. 4. Tuberculous disease of the hip-joint.

If the entire reports on the above cases could here be reproduced they would testify to the remarkable efficacy of Iodine injections, in these

* In January number of the current year of the Gazette, an article by the writer of this paper, has appeared describing two cases of chronic synovitis treated successfully with Iodine intravenous.

diseases. A perusal of the said article in the Gazette is requested to those interested in this new method of treatment.

7. The work done by Dr. J. C. Chaudhuri in Bengal at Bogra, is also worthy of note. His contribution in the Gazette, is not only interesting, but contains valuable informations regarding these Iodine injections in a long list of diseases. He gives an account of his experiences in this treatment, for more than 6 years and he found it very effective in the following diseases:—Typhoid fever, Influenza, Lobar Pneumonia, Broncho-pneumonia, fevers of unknown origin, (running a remittent course), Cancrum Oris, Erysipelas, Septicæmia, Tertiary Syphills, Sepsis, Malaria and Kala Azar. Out of these numerous cases tried, Dr. Chaudhuri gives a brief account of some of his striking achievements as in two cases of typhoid fever, a case of Erysipelas, a case of pneumonia and some cases of Cancrum Oris. Of these a short note of the typhoid fevers treated, and the erysipelas case will be of interest.

TYPHOID FEVER.

R. K. C. Pleader, aged 28. Fever 16 days duration, continuous, ranging between 104° to 105° F. with cerebral symptoms, bronchitis, and slow pulse. Widal reaction was positive at 1 in 100. Iodine was given on the 16th day, when the temperature was 104°, reaction occurred, and it rose to 106°, but within the next hour came down to 102°, and in the evening to to 99°. Next morning it rose to 102°, but another injection brought it down to 99° again, and a *third injection next day brought the temperature to normal* and convalescence was established.

Another case of a graver type was also treated with Iodine, with similar result. The object of citing the above typhoid case, in particular, is to point out to those medical men, who endeavour to find out better remedies for the relief of human sufferings the possibilities of Iodine in this disease. Typhoid fever especially is a malady, which has no medicine, properly speaking, upto this day. If Iodine injections can cut short the course of this obstinate and fearful disease, a liberal trial should be given to these.

ERYSIPELAS.

The next case, that will be cited, is a case of erysipelas, treated and cured with Iodine injections, after the *serums and specific vaccines had failed*

In a Hindu male adult the disease started from a carbuncle on the back—temperature was 105° F, pulse 130, symptoms of toxæmia present. Serum and vaccine treatment were tried, without benefit. Tinc-Iodine in 5 m doses were given, temperature came down to 10°F with profuse sweating immediately after the first injection. Three further daily injections completely cured the disease.

FEVERS OF UNCERTAIN ORIGIN.

Referring to fevers of uncertain origin, Dr. Chaudhuri says, usually 3 or 4 injections cure them. He also tried these injections in malaria and kala azar fevers, but did not get promising results, except that they break their remittent course.

BUBONIC PLAGUE.

Numerous other reports of magical cures with intravenous injections of this simple and ordinary tincture or an aqueous solution of Iodine have been published in journals from time to time, but want of space in this short paper will not permit their mention, but before closing, something must be quoted from the important paper that now the *Senior Surgeon of the Calcutta Medical College, Lieut. Col. F. Connor, I.M.S., read at the Medical Section of the Asiatic Society of Bengal on 12th December 1923, on the subject of Intravenous Iodine in the treament of septicæmia and other septic conditions. It has already been said that Col. Connor is a pioneer in the new system of treatment. He tried these injections in Bubonic plague which prevailed in epidemic form in Gaya District in Behar in the year 1910 and got very encouraging results. The fever diminished promptly after the injections, pain subsided and improvement in the general condition of the patient began. With these encouraging results, he became such an advocate of the treatment that he wrote as follows:—"Ever since 1913, the use of intravenous Iodine has become one of the routine methods of treating surgical sepsis in my wards."

INFLUENZA, AND PNEUMONIA.

9. Before closing these illustrations, attention of the reader is drawn to the recently published report of Dr. Shunker's cases of influenzal broncho-pneumonia, treated with intravenous Iodine. This disease (pneumonia) again is one of those, which are self-limited, as it is called, because it baffles all attempts to cut short its obstinate course. Dr. Shunker's experience only corroborates that of other workers on the subject, in this country as well as abroad, that Iodine injections can check the advance of this disease when well-formed and can stop it altogether, if given early. Dr. Shunker narrates, how he successfully treated 12 cases of influenza, which became complicated with pneumonia, with Iodine, and "how within 24 hours after the injections the patients passed from a condition of distress and anxiety into one of comparative comfort." (November 25, I.M.G.) There was not a single death.

MODE OF ACTION.

It will now be interesting to know how Iodine acts in the human system after being introduced into it through the vein, and in being so

*Col. Connor while he was Captain began this method of treatment. Now he is the Senior Surgeon of the Calcutta Medical College.

introduced how it brings about such wonderful results. To consider this, the minimum dose that produces a therapeutic effect should first be taken into account. Several workers have found only 5 minims of the B. P. tincture, once in 24 hours, brings forth marked therapeutic effect in an average adult. According to the calculations of an English doctor, 20 minims of the above tincture, which contains nearly ½ gr. of Iodine when mixed with the blood-stream, are diluted to the ratio of 1 in 230,000. With five minims, therefore, the dilution will be still greater. It is, therefore, not reasonable to assume, that in this very diluted state, Iodine can exert any antiseptic or bactericidal property in the circulating blood, or the tissues, where it reaches. How then, does this minute quantity of the drug work like a charm in many a dreadful malady, and in such a short period of time as a few hours? The explanation, however, is not lacking. There are actual observations on the point, that the medicine acts mainly by stimulating the defensive mechanisms of the body, such as "leucocytosis, lymphagogue action, and possibly "a general stimulation of the body tissues, either directly or through the thyroid gland, the action of which becomes, sometimes, deficient in chronic septic processes.

LEUCOCYTOSIS AND LYMPHAGOGUE ACTION.

The phenomenon of rapid hyper-leucocytosis has already been described in Dr. De Castro's papers. Col. Jeudwine also, has written in his elaborate article on the subject, that the benefit of the treatment appears to be due to the rapid leucocytic increase within 24 hours after an injection of 10 m. to 2 c.c. of Iodine solution. The leucocytosis is also permanent for some months, in his opinion.

LYMPHAGOGUE ACTION.

As regards the lymphagogue action of Iodine we may quote a few lines, from the masterly writings of Sajous in his Cyclopædia (Vol.-vi Subject, Iodine) on the subject. He says:

"Iodine is believed by Martinett and others to be a lymphagogue, the lymph becoming more rich in the salts than normally owing to the addition of those from the blood extracts, water from the surrounding tissues, or pathological exudates. This extra water then re enters the blood-stream, carrying with it the waste materials washed from the tiseues, which are then eliminated by the system. Iodine also stimulates lymphoid tissue in general, the result being a pronounced increase in the production of lymphocytes, especially *where small doses are used.*

STIMULATION OF LIVER AND SPLEEN CELLS.

As regards the general stimulation of the main body glands, the same author states that Iodine once absorbed, is taken up by the body cells, the amount present in various tissues depending upon the relative affinity of the latter for it, the spleen, the glands, and the liver being in order of Iodine absorbing capacity.

THYROID STIMULATION.

That the thyroid is stimulated by Iodine is a fact undisputed, the latter being the active principle of the gland substance. In the deficiency diseases of this gland, Iodine administration in small quantities, in any shape, brings about a rapid cure. A very nice account of this treatment has been published in a report of the county medical officer of Derbyshire regarding the treatment of goitre, an endemic disease of the place, known as Derbyshire Neck, a reprint of which, has lately been circulated to the medical profession.

IODINE IN THE TREATMENT OF GOITRE

The above facts being true, it can be safely stated, that through the stimulation of the thyroid gland, Iodine stimulates all the bodily organs of which thyroid is a great regulator, and hence a general stimulation of the tissues and cells of the body takes place after the administration of Iodine into the system.

So far as our present knowledge goes, we can attribute to these leucocytic phenomenon, lymphagogue action, thyroid stimulation, etc. as the probable agents, that bring about the therapeutic action of Iodine in the system.

PREPARATION.

There are two methods of preparing the solution for the injections; the spirituous and the aqueous. The first is the ordinary B.P. tincture and the second is a solution of Iodine in distilled water.

FORMULA.

Iodine gr. xii.
Pot. Iod. gr. xii.
Aqua m xl.
Alcohol oz. i.

The formula of the tincture is well-known. XII grs. of Iodine in an ounce of alcohol. The strength of the solution is 1 in 40, *i.e.*, 40 minims of the B.P. tincture or the aqueous solution, prepared according to the same formula, contain 1 grain of Iodine.

SOLUTION OF CHOICE.

The question now arises, which of the two solutions is better? There are some workers who prefer the aqueous to the alcoholic solution, on the ground that the latter may give rise to reactions and other untoward results, such as thrombosis in the veins. From the experience of the majority, however, it has been found that if the B.P. tincture is well-diluted and the solution carefully prepared, it becomes as good and as safe

as the aqueous solution. The thrombosis and other bad results, probably occur from some fault in the technique of the injection, than from the fault of the solution itself, as is the case with all intravenous injections. For the sake of convenience, the writer has always used the B.P. tincture but never met with any case of thrombosis. The aqueous solution, however, should be the solution of choice.

DOSAGE.

Next comes the important question of dosage. Many observers have tried with a small dose of 5 minims in an adult, and have obtained good results. There are others again who have used as much as 40 minims of the liquor or tincture per dose, which means 1 gr. of Iodine. Porter and Jeudwine advocate the employment of a still higher dose, *e.g.*, 2 to 4 grs. of Iodine. What is then the proper dose, which should be followed by the general practitioner? To decide, we must recapitulate once again the mode of action of Iodine in the human system. We have seen that we do not want to sterilise the system with the drug, as the dilution with the average dose say ½ gr. or 1 gr. becomes very weak after it is introduced into the general circulation, as described by Baillie, and others. Neither can we do so by a large dose, as the latter causes severe hæmorrhages, as was found by Boehm and Berg in Europe, in their experiments on cattle. Our object, therefore, is to stimulate leucocytosis and the lymphagogue action, as well as other bodily functions, with these Iodine injections —several workers, and perhaps the majority of them, have gained these ends with a moderate dose or even as small a dose as five or ten minims. With these small doses Castro observed that the leucocytes increased from a few thousands to 20 thousands in a few hours after the injection, and the other associated good effects, such as reduction of temperature and amelioration of symptoms, also were obtained. A small dose, therefore, gradually increased is the dose of choice. The initial dose should preferably be small, say 5 minims, as this would test the tolerance of a patient towards the drug. Twenty minims, i.e. ½ gr. of Iodine is a moderate dose, and perhaps a fair dose for an average case Higher doses should be controlled with a leucocytic count of the patient's blood, and regulated according to the action and reaction of the medicine, and should never be administered initially. What special benefit would Jeudwine's 2 grs. dose, or Porter's 4 grs, bring forth, has not been explained. On the other hand, a severe reaction or some untoward effect on the system might be produced with these big doses. Further investigations, however, are required on the matter, before a fixed dose can be stated. There is another inconvenience with a big dose, and that is the deep color.

COLOR OF THE SOLUTION FOR INJECTION.

The colour that such doses impart to the solution which prevents the inrush of the blood from the vein into the syringe is to be clearly seen. When however, the dose is moderate, and the dilution fair, the color of the solution assumes the port-wine tint.

METHOD OF DILUTION.

A good method of dilution is to take the original solution, either the B. P. tincture, or the aqueous one, and mix it with boiled and cooled distilled water, or better still normal saline, in the following proportions:—

5 minims in 2 c.c.

10 „ 3 to 5 c.c.

15 and 20 minims in 10 c.c.

TOTAL NUMBER OF INJECTIONS.

There cannot be an absolute rule with regard to the total number of injections that will be necessary in a case. These should be regulated according to the benefit derived from the injections.

INTERVAL.

The interval between these injections should also be regulated according to the severity of the case, and to the general condition of the patient. Usually daily injections are required in severe cases, whilst in mild ones, those on alternate days and bi-weekly injections serve the purpose.

REACTIONS.

After an Iodine injection, the patients sometimes get a reactionary rigor, which lasts for a short time, and is followed by a rapid reduction of temperature, and profuse perspiration. According to some, this is a good sign. But Iodine acts equally in cases that do not react also.

BAD RESULTS.

Generally speaking the Iodine injections are harmless, and no toxic after-effects follow them. Workers who have given these injections freely, have very seldom found any bad result. Jeudwine, out of his one thousand injections, observed slight Iodisms in a few cases. DeCastro noticed, in only one of his cases, a swelling in the right knee to develop a few hours after the injection. He also noticed a transient breathlessness in another patient, to come always with the injections. But all these were temporary, and the patients did much better with the injections, afterwards. Slight jaundice is sometimes observed in a few cases, the writer himself was reported of a case, in which the conjunctivæ were icteroid after the third dose. Besides these trifling discomforts in rare cases, no severe after-effects have been known, save and except the solitary instance of œdema glottis as reported by Dr. Pal from Burma in the July No. of the Gazette

in 1924. The patient was a Burmese lady of 50, suffering from Bubonic plague. Dr. Pal gave her intravenous Iodine, and after several hours, he was reported, that the patient became restless and struggled for breath. Whether this was due to Iodine or to some other cause it is difficult to say. An embolus in the lungs also might bring forth a similar condition.

HARMLESSNESS AND NO CONTRA-INDICATIONS.

The condition, however, soon passed off, and the patient subsequently improved a good deal. She was given further Iodine injections, and happily with no more bad symptoms. These susceptibilities are sometimes met with, after all intravenous injections, such as those of the arsenicals, but with Iodine injections, the chances are much less, and it has been the experience of the writer, that Iodine can be safely given by the vein, to young children, delicate women and old people, in all conditions.

CONCLUSION.

Judging from the above striking results of the Iodine injections, in various diseases, it must be said that this new mode of treatment has been not only a great addition in the physician's armamentorium, but is also a new hope in many a hopeless condition. The properties of Iodine, thus administered, have been shown to be almost equal to the highly-scientific serums and vaccines. Moreover, when the readiness, cheapness, and promptness of action of Iodine are taken into account, it should certainly be given preference to the more costly and elaborate methods, especially in treating poor men. In concluding, the writer hopes that a wider trial will be given to this simple, yet a wonderful remedy.

MENTAL DEFICIENCY *

BY

MAJOR O. BERKELEY HILL, M.D., I.M.S.

Among the many urgent problems which confront the body politic to-day, there is scarcely one which rivals in importance the problem of determining and rendering effective the best method of drying up the streams that produce defective and delinquent children. To achieve this purpose there must be close co-operation between the scientist, the political economist, the legislator, the tax-payer and the humanitarian, for the mentally-defective child is not only a disturbing factor in the social fabric but also liable to become a menace to public peace and safety.

Before going any further, let us be quite clear as to what we mean by "mental deficiency". First, what do we mean by the term "mental"? And how deficient must a person's mind be before he can be considered

* A lecture delivered at Calcutta.

technically "defective"? "Mental" is the adjective of "mind"; and to the psychologist "mind" includes not only intelligence, but also temperament and character. Therefore, so far as psychological usage is concerned, mental deficiency is applicable, not only to defect in intelligence but also to defect in temperament and character, if such can be shown to exist. It is very important to bear this point in mind because the law seems still to assume the existence of an innate moral sense although psychologists have long ago abandoned such a short and easy metaphor. Morality does not rest upon a simple intuition; but is a highly complex quality acquired after birth by slow and painful processes. It consists of memories, sentiments, and habits, associated ways of thinking, feeling and acting, which are not inherited or inborn, but are built up afresh, by experience and training, during each individual's life-time. The foundations of character, it is true, rest upon innate tendencies; but character itself is not innate.

While the problem of the mentally defective may never be solved in its entirety, it is the consensus of scientific opinion that it is first in importance of all public questions of the day, and that interest in the mental status and welfare of children is steadily widening, while the need of trained experts to determine the causes and methods of prevention of mental deficiency is becoming more and more apparent.

As you all are doubtless aware there is at present no legislation in this country in relation to Mental Deficiency although last February there was some discussion in the Legislative Assembly on a motion brought by Mr. Haroon Jaffer who advocated a Mental Defectives Act. In this circumstance the reference to legislation which I think it is necessary to make, will deal entirely with what exists in England. After the passing of the Education Act of 1876, making attendance at public elementary or other schools compulsory, it gradually became apparent that a group of children existed who were so far mentally defective that they could not be satisfactorily taught in the ordinary public schools, but who were not sufficiently defective to be certified as imbeciles or idiots under the Idiots Act of 1886. Many particulars of this class were brought to light through the enquiries of medical men among whom Dr. Francis Warner carried out the most painstaking researches on 100,000 school children. As a result of these enquiries, a Departmental Committee of the Board of Education was appointed in 1896 to consider and report upon the question. This Committee presented its report in 1898. It recognised that a number of children existed in public elementary schools who, in their mental capacity, were intermediate between the ordinary "dullards" and certifiable imbeciles, and it estimated the proportion of this class as approximately of 1% of the elementary school

population. Its enquiries showed that these children were incapable of receiving proper benefit from the ordinary instruction in these schools, but that they were capable of receiving considerable benefit from the individual attention and instruction given in special classes that, in fact, under such conditions there was a fair prospect of many of them being enabled to take their place in the world. It considered that these defective children would suffer by association with imbeciles and should not therefore, be educated with them; and it recommended that special classes and schools should be established to meet their requirements. This report led to the passing in the following year of the Defective and Epileptic Children (Education) Act. This Act was the first legal recognition in England of the mildest form of mental defect. It defines the class as those children who "not being imbecile, and not being merely dull and backward, are defective—that is to say, by reason of mental (or physical) defect are incapable of receiving proper benefit from the instruction in the ordinary public elementary schools but are not incapable by reason of such defect of receiving benefit from instruction in such special classes and schools as re in this Act mentioned." Now with increasing knowledge, we have learnt that children of this type are, in later life, incapable of maintaining existence without supervision, and are therefore true defectives. This point was recognised in the Mental Deficiency Act of 1913, which defines feeble-minded children as those who, "by reason of mental defectiveness appear to be permanently incapable of receiving proper benefit from the instruction in ordinary schools".

You will see, I think quite clearly that the criterion of mental defect employed by the Acts I have just quoted, is purely an intellectual one It is here that the great fault lies for not only are there far fewer intellectually defective children than there are temperamentally defective children, but much less can be done for the intellectually defective child in comparison with what can be done for the solely temperamentally defective child. Further, it is from the ranks of the temperamentally defective that our juvenile delinquents emerge to form in time the basis of our criminal population, for there is still a strong feeling about the importance of "punishment" with a corresponding reluctance to realise the need of paying more regard to the offender than to the offence.

I dare say that there are persons present who would be prepared to quote eminent opinion in support of the contention that delinquency is found invariably associated with intellectual defect. I am well aware that this view is widespread, especially in America. For instance, a psychologist in New York has reported that over 80% of the children in the juvenile courts in Manhattan and Bronx are mentally defective. On the other hand, one of the most experienced authorities in England, Mr. Cyril Burt considers that he was able to discover intellectual defect in only 7% of the juvenile delinquents he has examined. This great divergence of opinion springs chiefly from two kindred sources, from an interpretation of deficiency that is far too broad, and from a criterion of deficiency that is far too narrow. The criterion consists almost exclusively of tests; and the tests are almost wholly scholastic or linguistic.

It is impossible in the time at my disposal to attempt to describe the numerous methods that have been devised for the purpose of estimating intelligence. To all who take a serious interest in the subject I would recommend a study of the works of Dr. Ballard, "Mental Tests", "Group Tests" and "The New Examiner".

To eliminate the difference in age, intelligence is measured in terms of the so-called "mental ratio" that is, the ratio of each child's mental age to his chronological age by the calendar. Throughout the child's school life this ratio is approximately constant. The average mental age of the juvenile offender proves to be about 89%. This means that a child with an actual age of ten has, on the average, the mental age of a child barely nine.

I will now pass on to consider briefly the principle points in the prevention and treatment of mental deficiency, but to do this we must first know something of its causes.

I would summarise the more important factors in the causation of mental deficiency as follows:—

(1) Actual injury to, or disease of, the brain or its coverings.

(2) Heredity.

(3) Bodily ailments.

(4) Developmental physical abnormalities.

(5) Environment.

(1) Mental defect, especially of the intellectual type, may be caused by injury to, or disease of, the brain. This injury or disease may occur before the child is born, during birth or after birth. The health of the mother during pregnancy is often a contributory, if not a direct, cause of mental defect in the child. Thus maternal alcoholism, tuberculosis or syphilis may, and frequently do, play a part. Factors acting after birth include injury to the child's head in the early months of life, certain acute infectious diseases and defective bodily nutrition although the latter does not appear to be able to injure a child born of strong and healthy parents.

The prevention of mental defect due to causes such as these, is largely a matter for Child Welfare workers who can do much to teach pregnant women to look after themselves while carrying and their babies when they are born.

(2) In regard to heredity as a cause of mental defect, one can only say that apart from marriage between feeble-minded persons whose offspring will be almost certainly mentally defective, nothing very definite is known. There exist two main views as to the inheritance of mental defect. One holds that the mentally defective child is due to what is termed in biogenetics a "defect mutation" of the germ plasma; the other that the mental deficiency is the product of germ devitalisation. Both these views have led some people to believe that to prevent mental defect it is only necessary to sterilise or segregate mental defectives. This is a mistake, for, whichever view is adopted, the Mendelian or the germ impairment, only limited preventive results would follow sterilisation or segregation. On the Mendelian view assuming an initial proportion of one mentally defective per 100 of population, these methods would have to be continued for 22 generations to reduce the proportion to 1 per 1,000. If the view of germ devitalisation is adopted, it is clear that the sterilisation or segregation of certifiable defectives could only be attended with limited results. These methods would only prevent those cases which are the offspring of mentally defective parents, and the proportion of these is relatively small. To produce any appreciable preventive result it would be necessary to sterilise all those who suffered from a neuropathic tendency an impracticable and impossible proceeding. As a policy, segregation is better than sterilisation; mentally defectives are generally anti-social and as such should be segregated for their own sakes, sterilisation being then unnecessary. If sterilisation were relied on, it would mean the setting free of many people who should be under control. Birth-control would certainly not prevent mental deficiency; on the contrary there is every reason to think that it would lead to an increase in the percentage of cases. What is needed at the present time is not the indiscriminate advocacy of birth-control, but the encouragement of the multiplication of the biologically sound and fit and the discouragement of the unsound and unfit.

(3) Of the more important bodily ailments which may become factors in the production of mental deficiency, especially the temperamental variety, I would put in the first place affections of the eyes. Eye-strain is very prone to cause irritability, discontent, headaches and various feelings of bodily discomfort. Defective vision may exist without eye-strain but nevertheless it is capable of causing a type of mental irritation which may lead to reaction in anti-social acts. Another important aspect of eye trouble in a child is the effect it has on education and the acquisition of healthy interests. It is obvious that some defect in temperament is almost bound to follow a defect in vision which prevents a child from working or playing. Squinting may cause extreme distress in a child through having

the defect made fun of by his companions with the result that the child's reaction may lead to delinquency. Septic conditions of the ear, nose and throat as well as carious teeth, all tend to reduce the physical vitality of the child with secondary impairment of its mental faculties. Defects of speech are very liable to have deleterious effects on character. The victim of a severe stammer looks upon himself as different from other persons and thus is easily won by suggestions of an anti-social behaviour. Stammering children are liable to prefer the society of their social inferiors because such companions are less likely to distress them with comments on their defect. To those of you who are interested in the relation of mental defect to stammer, I would recommend an admirable study of the subject by Dr. E. W. Scripture.

In order, therefore, to eliminate the bad effects on the character of children which arise from any of the physical ailments I have enumerated, it is of the greatest importance to have school-children thoroughly examined from time to time by a competent doctor.

(4) By physical abnormalities of development I mean physical conditions which are disproportionately correlated with the age of the individual. Imperfect correlations of this type may lead to such defective adjustments and moral stresses as to determine criminalism. Extreme under-development has frequently a pernicious effect on temperament so that many criminologists regard it as a major factor in the causation of criminal habits. General physical over-development, especially when associated with premature puberty, is a common cause of sexual misdemeanours in children and adolescents, more particularly females.

(5) Perhaps the most important factor of all in the production of temperamental defect is environment. Indeed, when one sees the homes in which some children are compelled to live, especially in our big cities, can one be surprised at the existence of so much juvenile mental deficiency? How could a child's mind escape injury, except by a miracle, when the parents are vicious; when day-in and day-out the home resounds to the noise of quarreling and nagging? Extreme severity on the part of a parent, especially of a father, is a potent, cause of misconduct or mental breakdown. Temperamental defects in children are also found associated with the separation or divorce of their parents, crowded housing conditions, poverty, neglect, bad companions, unsatisfactory social allurements and unsatisfactory vocations. The lack of healthy mental interests has been found to play a conspicuous part in causing damage to the child mind.

You will see now what a huge part is played by the environment in the mental health of the child and consequently how important it is if any serious curative or preventive measures we propose to adopt to organise

social workers to examine into the home and school conditions of all children whose mental health we have reason to suppose, is impaired.

Having now completed a brief survey of some of the main points in the causation and prevention of mental deficiency, I will turn to the question of treatment. The treatment of mental deficiency falls roughly under two heads—institutional and extra-institutional. Let us take first extra-institutional treatment. For this work, the existence of clinics is almost essential because they afford one of the best means of reaching and identifying the mental defective. If the feeble-minded are to be saved from those distressing complications of delinquency, crime and various other manifestations of mal-adjustment, they must be found when young enough to make it possible to teach them good habits and to train them in accordance with their intellectual capacities. These clinics should be held at a general hospital or at a Red Cross centre or similar quarters, where the public will not hesitate to come for advice. The success of such clinics will depend to a considerable degree upon the facilities for follow-up work, after-care and supervision. It will do little good to find indications for treatment or remediable physical defects, to suggest changes in habits or environment, to advice special methods of training or other disposition, if there are no agencies to see that such measures are carried out. Here is the weakest link in the chain and the one most difficult to strengthen. If the extra-institutional care is to succeed, provision must be made to train special teachers for the subnormal children who are being identified by the clinics.

Besides these clinics for children of school-age, there is another type of clinic for children of pre-school age. In America, these have been called "habit-clinics". The function of the habit-clinic is to deal with those children of pre-school age, that is, between the ages of two and five years, who are developing undesirable methods of meeting the daily problems with which they are confronted.

I do not think the justification for the organization of these clinics is to be found in some vague hope that they may tend towards the prevention of mental disease, but rather in the fact that their existence is justified by the immediate results that can be got from them. I will cite a few examples from a report on the work of one of these habit-clinics. Two little girls, aged five and six, were brought to the clinic, the younger for persistent bed-wetting and waking in her sleep, the elder for vomiting every morning as well as for bed-wetting. Enquiry into their cases showed the morning vomiting of the elder child was purely an act of imitation of her mother who was pregnant at the time and suffered with morning vomiting. The bed-wetting of both children had been tolerated for a long time and no measures had been taken to establish a routine

that would break the habit. Within two weeks the vomiting and bed-wetting was cured in both the children by the adoption of simple and commonsense methods. A little girl, aged five and a half, refused all food unless fed by her aunt. When left alone with food she hid it and then told fanciful tales as to what had happened to it. The institution of simple measures soon resulted in the child feeding herself and her family, being relieved of an unusually wearisome task. A little boy, aged four, every now and then used to lose his voice. Enquiry into the case showed that this was caused through the child imitating a neighbour who suffered from a loss of voice due to hysteria. A little girl, aged two, was taken to the clinic for making vicious attacks on her sister, aged four. It was discovered that the behaviour of the younger child towards the elder was due to extreme jealousy aroused by the petting bestowed on the elder by the father. Some advice to the father how to behave towards his daughters soon put a stop to the trouble

I come now to the consideration of institutional treatment. The types of defectives that need institutional treatment may be summarised as follows:—

(1) High-grade cases who are markedly unstable, praticularly during the period of adolescence, and those who come from very bad homes. Of these, a number may later be discharged after training, and when their conduct has become more stable.

(2) Epileptic and physically defective children.

(3) The lowest grade children, imbeciles and idiots, many of whom are custodial cases.

Now the immediate problem for us is that India has at present no institution for mentally defective children except the ordinary mental hospitals which are most unsuitable for this purpose. It is high time an institution for juvenile mental defectives was started. If there is no building suitable for the purpose, one must be constructed. Every community has to pay in one way or another for its mental defectives, and it is surely better to pay in money than in misery, vice, crime and industrial inefficiency. The longer we wait, the more serious does the problem become.

CASES AND COMMENTS.

AN INTERESTING CASE FOR DIAGNOSIS

By

CAPT. S. L. CHOPRA, M.B., B.S., DERA ISMAIL KHAN.

On the morning of 13-1-26, I and 3 others were called in to see an anæmic Hindu lady about 23 years old with fever 100°F and in a semi-unconscious state.

She was confined on 30-12-25 for the 4th time—the delivery being normal as well as the lochial discharges and uterine atrophy, and she—as is usual in this part of the country—took her recovery and bath on the morning of 11-1-26. The same evening she developed severe headache and slight temperature and these continued till the 12th, when, during the night, she went semi-unconscious with the same low temperature. Examination of the private parts and urine the same night revealed nothing abnormal; but in spite of this normal saline, vaginal douche and anti-streptococcal serum 10 c.c. intravenously were given by the physician-in-charge.

On examination we found the lungs, heart, spleen and liver normal; pulse regular, of low tension and 83 per minute; reflexes—both deep and superficial-normal; and pupils equal and reacting normally to light. She was, now and then, putting her hands on head and both legs and arms were being moved normally. There was no head retraction and no Kernig's sign

Blood was taken for examination and in the meantime normal saline vaginal douche, anti-streptococcal serum and rectal enema were advised.

Blood results were :—

Malarial parasites—Nil.
Dif. count polys—64%
Large mononuls.—7%
Lymphos.—28%
Others—1%

On re-examination at 2 p. m. the right leg and right arm were found to be defective in movements and the sensations were sluggish. The pupils were still equal and reacting. The paresis was more evident by evening and the left pupil was dilated which as well as the sluggish reaction to light and paresis—which developed into paralysis—became self-evident by next morning.

The diagnosis of softening of the brain (embolism from the Irbins) was made and she was put on normal saline vaginal douches, antistreptococal serum, small doses of calomel, bromides, carbides (though no history of syphilis was traceable), with cardiac tonics with complete rest in a dark room.

The progress notes are as follows :—

15th.—No fever. Paralysis better, pupils unequal and sluggish unconsciousness same, patient restless.

16th.—No fever. Paralysis (both motar and sensory) better. Pupils equal and reacting. No head retraction, no sleep last night, morphia and atropine tried with 4 hours' rest and lessening of restlessness.

17th.—Restlessness less than two previous days, only paresis left pupils equal but sluggish, no head retraction, fever 99° F unconsciousness the same. Slept little.

18th.—Very restless—no temperature; pupils unequal and sluggish, no head retraction. No sleep. Morphia and atropine produced 4 hours' sleep but no relief to restlessness after it.

At 4 P.M., there was definite head retraction with both pupils contracted and sluggish. Lumbar puncture produced 40 c.c. of clear fluid with slight acid reaction and no albumin. This did not reduce Fehlings and was full of gram. Negative 'extra-cellular diplococci' with rare W. B. C. (on average, one for every 3 fluids) and the patient was quiet for an hour, after which, the old severe restlessness returned.

The patient was given 30 c.c. of anti-meningococcal serum intra-muscularly (as it was not advisible to perform lumber puncture again only 3 hours after the 1st one and viens could not be found) and morphia $\frac{1}{8}$th grains with 1/50th atropine with the result that the patient was quietened and later passed into coma with feeble and quick pulse and died at 7 A.M.

A CASE OF CYST-ADENOMA OF LEFT BREAST

By

AMER NATH YAJNIKA, M.C.P. & S., JAIPUR.

Name :—Prem Bai, Age :—50 years,
Caste :—Nager Brahman, Civil state :—Widow since she was 10 years old.

She sought admission in our Nursing Home for an abnormal size of her left mamma on 15th September 1925.

Clinical features of the part :—Duration, 6 months.

Size at the time of examination :—Circumference of the mamma = 78½ cm. Height = 22½ cm. Distance from the nipple to the outermost limit = 30 cm.

Its onset was insidious, and slight pain was the first symptom which made the patient to doubt something wrong with the part.

Physical examination-Inspection :—The enlargement was conical in shape with its apex at the nipple. It was enormous in size as stated above.

The skin of the part was traversed by dilated veins, and an escape of blood-stained fluid from the nipple was noticed. The nipple was depressed to a slight extent.

Palpation :—The feel was soft and lobulated, and fluctuation was detected on deep palpation. It could not be moved apart from the mamma.

Condition of the adjacent parts :—The axillary glands were not enlarged. The other organs on examination were found to be quite free from dissemination.

Past History :—There is no history of an attack of previous mastitis or history of a blow or injury preceding the appearance of the growth There is no hereditary proclivity to the disease.

rovisional Diagnosis :—Cyst-adenoma of breast.

Operation :—The patient was given calcii chloridum (gr. xx T.D.S), three days before the operation. The patient was prepared for operation as usual and chloroform anesthesia was given. After preliminary painting of the part with tincture iodine, an eliptical incision was put, beginning

from the outer margin of the clavicle, surrounding the mamma and terminating at the lower limit of the growth. As the mamma was found practically adhered to the growth, we had no way left but to extirpate the whole thing en masse. The fat, lymphatic glands draining the area, and a

part of pectoralis major and minor were carefully dissected. While removing the growth en masse, the mother cyst gave way and there was swelling out of the cyst contents in gushes which were rather hæmorrhagic. After the growth was removed, the raw surface was covered by the flaps of the wound, sutured with extra strong silk, and drainage tube 25. cm long was put. The growth after removal weighed 9 pounds.

Post-operative treatment:—An hour after the operation, the patien began to sink, and then some two pints of normal saline were infused intravenously to revive the patient. The subsequent convalescence was unaccompanied by any serious complication. The wound healed by first intention.

HEMOPLASTIN IN UTERINE HÆMORRHAGE

By

BALAKRISHNA M. MEHTA, M.B., B.S., BHAVNAGAR.

A Hindu female patient, Kunbi by caste, aged about thirty years suffering from uterine hæmorrhage for five days was seen on the 14th of September 1925. She had gone fifteen days over her usual period. The bleeding was excessive. There was no pain. She had been under the care of a lady doctor who had given her three pituitrin injections. Pituitrin did not stop the bleeding completely.

The patient was very anæmic, and a loud hœmic murmur was heard over the pulmonary area. She felt giddy even if she got up in bed.

Ordinary pharmacopœial preparations were tried by the mouth; and the bleeding was stopped temporarily only to return within a few hours.

The pulse was 90 per minute; it was soft and of small volume.

She was getting low fever up to 99·4° F. Nothing abnormal was found in the lungs. The spleen was just palpable.

Hemoplastin 2 c.c. P. D. and Co., was injected hypodermically.

On the 15th November, no bleeding. On the 21st, slight bleeding and so another injection of hemoplastin 2 c.c. was given. She has no more bleeding since then.

In September 1924 she had had a similar attack of bleeding which was brought under control by pituitrin injections.

P. V. examination revealed no definite cause for bleeding.

A CASE OF HICCOUGH

By

D.G. CHOURIKAR, L.M.P. PANDHARKAWAD, (BERAR)

I had an occasion of reading a case of persistent hiccough in your journal of November last by Dr. H. R. Panda. I hope you will allow me to state my experience of such cases, though very few in number, which I had to treat in the short period of my practice.

On 5—8—25 a patient by name Gowrishankar aged 40, Baniya by caste, came to my hospital with complaints of persistent hiccough with occasional dry hacking cough and asked me to relieve him of his hiccough.

HISTORY OF PRESENT ILLNESS.

About 8 days back when he was on tour for his business he happened to drink water of a small nala in the jungle. For the following two or three days he felt a little bit constipated and so he asked for some purgative from a native physician, who gave him some medicine which the patient could not tell. It acted on his bowels with loose watery motions. He went again to that physician and told him of the complaint. The physician gave him another dose which stopped the motions. But after about 6 or 8 hours, while he was sleeping, all of a sudden, he got up with the complaints of dry cough, which was soon followed by severe persistent hiccough. With these complaints the patient came to the hospital on the second day of the attack.

I examined the patient and found his lungs and heart to be normal. He had enlarged tonsils and elongation of uvula, throat was slightly conjested. No abnormality was found in the abdominal cavity. Bowels were not quite free.

PAST HISTORY.

The patient did not give any history of such attacks before this, nor of any other important diseases.

TREATMENT.

I first gave him four grains of calomel with sodi-carb and the following mixture was sent to be given after purging:—

(1)	Re	Sodi-carb	gr. xv
		Tinct. card. Co	dr. ½
		Tinc. belladonna	min. v
		Spt. chloroform	,, xx
		Cascara evacuant	,, x
		Aqua	oz i

Mft. One ounce every three hours.

(2) Throat paint of thymol and merthol with Pot. Iodide was applied to the uvula and throat, morning and evening.

I was called about midnight to see the case. Patient told me to kindly prescribe him such medicine as would enable him to sleep, as he had no sleep since the last three days. So I gave him a powder of sodium bromide grs. 10 with chloral hydras grs. 5

SECOND DAY.

In the morning, the patient came to me saying that he had sound sleep with only one attack of hiccough during sleep. His bowels were free. Cough almost disappeared. But on waking the same type of hiccough appeared again. That day I gave him a mixture.

Re	Oleum cajaput	min i
	Tin. opii	,, v
	Mucilage	qs
	Aqua	i oz.

To be taken 1 oz. every two hours till four doses and then every four hours.

THIRD DAY.

I was told that the patient had disturbed sleep on the previous night, hiccough appearing only three times and lasting about ten minutes, bowels free. I continued the same mixture one oz. every six hours. That day, he had only one attack lasting for five minutes. The patient did not return on the following days.

I was doubtful of the cure till the last fortnight when I happened to see him by chance and asked him about his complaints. He told me that he was alright since that time. He further assured me that the mixture given was very efficacious.

AN ENQUIRY

By

J. C. BAGCHI, L.M.F., MEDICAL OFFICER, DURGAGANG DISPENSARY, PURNEA.

I request the readers of the "Antiseptic", to explain the cause of the disease of which I am writing something about, which came to my notice during my stay here for about two and a half years, through this well-known journal.

1. A Hindu woman of 19 was placed under me for the treatment of hysteria, She was married at the age of 18½ years and after her marriage the disease came to her husband's notice. She had menstrual disorder. Her constitution was good. At first many indigenous drugs were given but to no effect. Having seen no remedy, at last she was placed under my treatment.

I treated her with only two medicines and became successful in curing her from it. The members of the family of the woman also were of opinion that she was under the influence of "evil spirit."

Treatment.—Hormotone without post pituitary of G.W. Carnrick & Co's U. S. A. one tablet to be given before meal twice daily and ovarian substance desiccated 5 gr. tablet of Parke Davis & Co, Bombay, one tablet to be given at the time of going to bed. These two medicines cured her from it. *She is still taking hormotone without post pituitary and asteris cordial rio to be given as directed. I also treated 4 or 5 hysterical cases with the same drugs and became successful.*

Then the next point comes. For this I am *going to request the* medical men to mention the cause of the trouble. I *am in darkness* in diagnosing it correctly. One morning, the husband of the woman came to me to take some medicines by which the trouble could be removed. He at first hesitated to mention and then he told me privately that just after copulation both he and his wife felt burning sensation in their generative organs. This sensation gave them much trouble and lasted for 2 to 3 hours. I was really puzzled to hear it as they had no venereal *disease. There was no defect of the vaginal canal of the woman. Then I advised the man that both the medicines be continued. It is strange to say that after 2 months the* sensation which gave them much trouble, was cured.

Here the question arises, why this sensation occurs?

II. *The second case is a multipara. She delivered in July last. The husband of this woman told me that a burning sensation for half an hour was felt by his wife, just after the copulation. In the second case, the peculiarity* was that the sensation was felt only by the *woman.*

Why the sensation occurs and why is it felt by the *woman, not by the* husband?

This sensation has been removed without any treatment.

III. *The third case is a primipara. In the first part of the pregnancy (about 4 to 5 months), the husband of this woman came to me and told me* that a burning sensation was felt by his wife *in the vaginal canal just after* copulation and the sensation lasted for 15 minutes. Sometimes washing was also required for relief. The man continued copulation up to 7 months of pregnancy of his wife. It is strange to say that after 6 months of pregnancy the sensation was removed without any treatment.

Why it occurs and why is the duration short?

In my opinion it may be due to nervous debility but I am not satisfied with this. So I request the medical men to write something about it.

A CASE OF HEADACHE.

By

D. J. C. BAGCHI, L.M.F., MEDICAL OFFICER, DURGAGANG DISPENSARY, PURNEA.

In the first part of December 1925, I was called in to see a patient at Chandpur. The patient was a woman of about 35 and a Hindu widow.

The condition of the woman in which I saw :—

(1) Health was good.
(2) Bowels not moved for last 6 days.
(3) Pulse regular.
(4) No fever, but very restless.
(5) Severe complaint of the head.
(6) No abnormality of spleen and liver.

Treatment :—(*a*) Saturated solution of mag sulph. was given at a time in a dose of four ounces to move bowels.

(*b*) Cold application was given on the head.

(*c*) The following mixture was given :—

Re :—

Pot. bromide gr. x.
Chloral hydras. gr. viii.
Spt. chloroform m v.
Tr. nux vom. m v.
Tr. digitalis m v.
Aqua ad. oz i.

Mft. Mist send 6 doses to be given every 2 hours.

On the third day, I saw that there was no improvement except bowels moved for 4 times. Then this mixture was given.

Re :—

Liq. morphia hydrochlor m xv.
Aqua ad. oz. i

Mft. Mist. send 6 such doses to be given thrice daily.

This day I gave Veramon tablet 3 for her, to be given if no good effect found by the above mixture.

On the 5th day, finding no effect I injected Hyocine Hydrobrom 1/100 gr. hypodermically. On the sixth day, I came to learn that there was no improvement of the case when I enquired whether she had any menstrual disorder or migrain. Her mother told me that she has been suffering from menstrual disorder for 8 or 9 years. Then I advised her to bring "hormotone without post pituitary", of G.W. Carnrick's immediately, otherwise the sights of the woman would be lost. Then she ordered for that medicine. But during 5 days, I only continued the following hypnotics :—

Paraldehyde, sulphonal, camphor monobrom etc. but to no effect.

On the 11th day the hormotone came from Calcutta when I stopped all my medicines. The medicine was given to be taken twice daily, one tablet before meal and the woman has been cured by this tablet and her sights came back.

One day she could not see anything of her surroundings, when I told her mother that the sight of her daughter will be lost. I am really glad that she is now alright.

I request my fellow brethren to write anything about headache if they have treated any case with the drugs which I have mentioned.

A CASE OF PHLEGMASIA ALBA DOLENS

By

C. MANJUNATHA PAI, L.M.P., NILESHWAR.

On the 9th November 1925, I was called to Payyanoor to see a case of fever with swelling of the right leg after delivery. The patient Mrs. S. was a lady aged about 28 years. The following history of the illness was related to me by the mother of the patient :—

The patient had a still birth on or about the 23rd September 1925. She felt a sort of burning sensation in the abdomen together with a feeling of heaviness in the head, accompanied by severe headache the next day. A teaspoonful of brandy was given to her thrice a day till the 4th day as was done during the two previous deliveries. Both the other children are alive. She had shivering, followed by fever on the 3rd day. From the 4th day, she had offensive discharge from the vagina and fever was rising higher. A native physician was consulted who gave a medicine for application to the head and another to be taken internally. There was some relief both of the headache and fever but the vaginal discharge was foul-smelling. The same treatment was continued and the vaginal discharge suddenly stopped on or about the 10th day when there was a profuse perspiration. Feeling that fever had subsided on account of the perspiration, a bath was given to her on the 11th day. That evening she got a shivering alone. Hence another bath was given to her on the 12th day. The next day *i.e.*, the 13th day, there was high fever accompanied by unbearable headache. So, another native physician

was consulted who gave some tablets to be taken wih a Kashayam, the prescription of which was given. This treatment continued till the 17th day. Daily in the evenings, she was having shiverings followed by fever. Sleeplessness together with abdominal pain also were complained of. There was, in addition, constipation too since the last three days. The abdominal pain increased and abdomen puffed up. Hence the local medical officer was called in. He gave a mixture to be taken internally and a medicine to be applied to the abdomen and the part fomented. The patient got some relief to the abdominal pain and had some sleep too. As she had no motion, enema was given the next day, but only the water was passed without any fœces. Two days later, the medicine was changed and sago was prescribed as diet. Since then, she was having diarrhœic motions about 10 to 12 in number per day, giddiness with sleeplessness and loss of appetite also set in afterwards. The abdominal pain was now shifting from one flank to the other. Pain in the right leg began on the 26th day and it was seen suddenly swollen. Finding no improvement till the 28th day, I was called in.

CONDITION OF THE PATIENT ON EXAMINATION.

The face was anxious and pale. There were beads of perspiration on the forehead. The whole of right leg was swollen as far as the hip. The tongue was coated. The leg was not pitting on pressure but was tender to the touch. The patient was lying on her back and could not move from side to side. The slightest movement aggravated the pain in the leg. The patient had about six diarrhœic motions during the day and five motions in the night. There was absolutely no sleep. She could not retain anything due to vomiting. The temperature was 102·4° F. Pulse weak, 136 per minute. Respiration 22 per minute. The lower part of the abdomen was tender. Spleen and liver normal. Heart also normal except little weak. Lungs little congested.

Treatment.—That night a vaginal douche of one drachm of Tr. Iodine to a pint of hot water was given. There was no abnormality in the fluid returned. The patient was advised to keep the right leg elevated and the following mixture was sent the next day.

Re—

Tr. aconite m xv
Spts. etheris nitrosi m xlv
Liq. amm. acet. oz. iii.
Liq. morph. hydrochl. m xxx
Tr. senega m xxx
Elin. ipecac m xxx
Aqua chlorof. (oz) iv (4)

One oz. four times a day. Pigment Belladonna was also sent to be applied to the whole leg and fomented. Diet consisted of only milk and barley water. The next day, when I saw the case, I was told that the lady had only two motions after taking the mixture during day time and twice at night. The temperature was 100·2°F and pulse 110 per minute. Respiration, 20 per minute. Cough, relieved to some extent. Had sound sleep in the night. The pain in the leg also was a little better. Douche was given that night also and the same mixture was repeated. On the third day of my treatment, when I visited the patient, I was told that the lady could take the prescribed diet without vomiting the same and that there was no nausea too. Cough had completely stopped. Temperature 99·4° F. Pulse, 100 per minute and respiration, 20 per minute. Patient was looking bright. There was no motion the previous night and she had sound sleep. The swelling of the thigh had almost disappeared and the pain was relieved to a great extent. Temperature was 98.6° F. Pulse 92 and respiration, 18 per minute. The mixture was continued. On the 4th day when I visited the patient, I was told that the patient had a hard motion, and had sound sleep the previous night. She was complaining of hunger. The swelling on the foot alone was as before. Pain nearly subsided. The temperature was normal. Pulse 90 and respiration, 18 per minute. The douche was discontinued and the same mixture without liq. morph. hydrochl. was continued and pigment belladonna for external application. I did not afterwards visit the patient but the same treatment was continued till the end of the week. On the 8th day, the mixture was changed to this;

Re—

Quin. sulph. gr. iv
Acid nitrohydrochl dil m xxx
Ferri Et. amm. citras. gr. xxx
Tr. nucis vomic. m xv
Tr. calumba oz i
Vin. pepsin. oz i
Aqua chlorof. oz iii (3 oz)

Ounce one to be taken, T.D. after food. The diet was changed to conjee in the noon and milk and barley water during the rest of the day. The patient was advised not to move the leg for two weeks more and to continue the external application of pigment belladonna with fomentation for 3 days more. From the 23rd Nov. 1925, the patient was allowed to take conjee thrice as the patient was complaining of extreme hunger. She was having one regular motion every morning. Movement of the leg brought on pain. The patient was advised not to use the leg for about a month more and even afterwards to be very careful while taking

steps. The mixture was continued till the 5th December 1925. After a month when I had to go to the place, I went and saw the lady quite alright.

DIAGNOSIS OF HÆMATURIA

By

P. GOPALAKRISHNAN, NEGAPATAM.

This theme has been and is of much importance, that I thought it might not be amiss to discuss it. Whenever a case of hæmaturia presents itself, the first thing to find out is—is it actual hæmaturia ? Large quantities of blood in the urine could be found out by gross examination, while minute quantities could be found out by the microscope or by chemical tests. The second point is to find out the source of the bleeding. A glance at the chart given below shows the various sources and a few possibilities. (1) The kidney (2) The ureter (3) The bladder (4) The seminal vesicles (5) The prostrate gland and (6) The urethra, anterior and posterior.

In big hospitals, the diagnosis may be easy and determined with accuracy by the use of the newer methods of examination, but in muffussil dispensaries, where the cystoscope etc., are not available, it is necessary to depend on history—carefully shifted out—and chemical tests. Thirdly, what is the pathology of the hæmaturia, at its source ?

Renal hæmorrhage is usually due to one of the following causes :—

Tumour, calculus, injury, congestion, acute inflammation, tuberculosis of the kidney, and acute Bright's disease.

Tumour of the kidney is difficult to diagnose. Pain, loss of weight and hypernephroma (diagnosed by careful palpation, a difficult procedure), coupled with hæmaturia may suggest kidney involvement. Hæmaturia in tumour of the kidney is sudden without any apparent cause and profuse. The diagnosis is certain, if metastases are present.

Hæmaturia from calculus is easily made out, associated as it is with typical colic, and the effect of change in position.

Hæmaturia, due to injury is easily diagnosed, as it is always concomitant to other injuries such as the crushing of a body between cars or when heavy vehicles pass over the body.

In tuberculosis of the kidney, we have, as aids in diagnosis, general symptoms of tuberculosis and suggestive signs thereof. The bleeding in the complaint is chiefly early in the course, and gradually diminishes.

Hæmeturia due to acute nephritis may be difficult to diagnose. Later in the condition, however, casts and albumen are found in the urine after the hæmeturia has ceased. The onset of the disease is precipitate and not connected with much pain.

Congestion may be acute or chronic. Chemicals produce congestion, or inflammation, depending on the amount taken. The quantity of urine in congested kidneys, is small, less dark in colour and of a high specific gravity.

Hæmeturia from passive congestion from kinking of the pedicle in a movable kidney is transitory ; and the movable kidney can be found out by palpation.

Ureter :—In the ureter, stone, tumour and tuberculosis produce hæmeturia. The hæmorrhage is scanty and attended with colicky pains.

Bladder :—Hæmorrhage from tumours of the bladder is similar to that from tumours of the kindey and is characterised by sudden onset, long duration, its failure to respond to therapeutic measures and its great amount.

Hæmorrhage from stone in the bladder is of shorter duration, of lesser amount and is referable to exercise, change of position and associated with pain or strangury. The use of a stone searcher will clear up the diagnosis.

F. B. in the bladder may cause hæmeturia and is determined by history.

Hæmeturia occasioned by cystitis is associated with dysuria, bladder pains, tenesmus and frequency.

In tubercular cystitis, the bleeding is small, even in the presence of ulcerations ; tubercle bacilli may be found by the microscope.

ANTERIOR AND POSTERIOR URETHRA.

In this connection, we have to remember, the physiological division of the urethra into anterior and posterior and that the external sphincter divides them, so that hæmorrhage from the anterior urethra appears at the meatus, while that from the posterior urethra, passes over the internal sphincter into the bladder. When hæmorrhage from the posterior urethra is excessive, it is difficult to diagnose it from hæmorrhage from the bladder. If, as usual, the hæmorrhage is slight, the 1st glass is clear, the second cloudy or sanguinous or just at the last moment, a few drops of pure blood are emptied.

Terminal bleeding indicates, that the source of bleeding, is just in front of the neck of the bladder. But this may be simulated by (1) small bladder stones, which at the end of the act of micturition, impinge at the

sphincter and cause bleeding by trauma and (2) small prostratic stones intruding into the urethra and causing bleeding by trauma.

Papilloma of the urethra may also cause bleeding. Bleeding from the anterior urethra is easily diagnosed, and is usually due to urethritis—especially gonorrhœa—or the injections used in the treatment of that condition.

Structures of the urethra seldom cause hæmorrhage. Some vessels in the dilated walls beyond the stricture, may cause rupture and cause bleeding, and this can be found out by the introduction of an olive-tipped bougil.

Injuries of the urethra, from falls, blows, kicks, or intrimentation, (false passage) may cause bleeding; but here, the history makes clear the diagnosis.

Lesions of the prostrate such as an enlarged prostrate, hard fibrous prostrate or tumours of the prostrate—also cause bleeding. In prostratic hypertrophy, the bleeding is profuse and of sudden onset. Giving not much pain, they cause obstruction or retention of urine. Rectal examination will stop up the cause.

Some infectious fevers, *e.g.* scarlet fever, malaria and influenza,—may cause hæmeturia in the course of progress.

Hæmeturia—sometimes is said to come on without any cause. In my opinion, there is no such idiopathic hæmeturia, because a careful examination may show the patient to be suffering from tuberculosis of the kidney.

TOBACCO AND FLEAS

BY

DR. S. MALLANNA, M.D., HYDERABAD, DECCAN.

In the year 1917 I did some experiments concerning the action of tobacco on fleas, and on finding its wonderful efficacy in destroying fleas, I suggested the prevention of plague by its means to H. E. H. the Nizam's Government and carried out some experiments in the city of Hyderabad during a plague epidemic by spreading tobacco leaves on floors of sleeping rooms of houses in infected area and obtained 85 p.c. of success in preventing plague in dwelling houses, the report of which appeared in the Indian Medical Gazette in February 1918.

At the time when I carried out these experiments I was unaware as to why it was that tobacco destroyed fleas but later studies have revealed some facts which, in my opinion, are very important and hence this article.

It is a well-known fact that tabacco is an American plant. The real name given by the Americans not having been known, the word tobacco

comes in use from the instrument used for smoking. Columbus sent a party to Cuba to explore in 1492 who found smoking of tobacco very common in that land. That was the first time that anything of tobacco was known to the civilized world. In 1558, the plant was first brought to Europe by a French physician named Francisco Fernandis from Mexico. The Latin name for the plant Nicotianum Tabacum was derived from the fact that Jean Nicot, a French Ambassador, was the first to send seeds of tobacco to Portugal.

Its use soon became popular in countries in which it was introduced. The chief uses to which it was put in human-beings are smoking, chewing and its use in the form of snuff. In the opinion of Sir Robert Christison, it has the power of removing exhaustion, listlessness, and restlessness in many individuals who use it habitually, and hence its general use as an article of luxury. On the other hand, in the opinion of Dr. E.A. Parkes and others it produces decided injury from excess, though in moderate use there is no harm done except in youth. The habitual use of this drug in the young decreases physical and mental vigour and especially produces symptoms of anæmia, palpitation, intermittent pulse, and other affections of the heart and circulation. It is an admitted fact that a disease of the vision—Tobacco Amblopia—is contracted by smokers and is not uncommon among those using strong, heavy preparations such as black twist. Besides, tobacco is also used from time immemorial in Horticulture for the destruction of insect pests.

Tobacco contains two deadly poisons, one nicotine, an oily liquid alkaloid, which is an active principal of tobacco. According to Lœwenthall, 63 p. c. of nicotine passes into smoke on combustion in smoking and hence the inhaled smoke is more injurious than mere puffing. The other is hydrocyanic acid. This does not occur in a free state but exists in a compound form. During the process of curing tobacco, certain chemical changes take place under the influence of moisture, heat (54·6 c.) and a ferment and as a result hydrocyanic acid is generated. The presence of HCN. in tobacco was proved by Vogel in 1856, Kissling in 1882, and Habermann in 1902.

I infer that tobacco has the power of destroying fleas from the following facts:—

During my experiments I found that:—

(1). Green leaves have no effect on fleas but the cured leaves have, hydrocyanic acid being produced during the process of curing.

(2). Tobacco has deadly effect on fleas even at a distance of 6 inches. That means that the poison which acts on them must be in a gaseous form, and HCN. being a gas, it emanates from the cured leaves.

(3) Its action in killing fleas is practically instantaneous or in a few minutes as seen in HCN. poisoning cases.

(4) Fleas shudder powerfully before death as seen by me. The shuddering was also noticed by Ittner in HCN. poisoning cases in 1809.

HCN. acid is commonly spoken of as Prussic acid and was first discovered by Scheele in 1780 but it was not till 1803 that Schrader first found it to be poisonous. The crude oil of bitter almonds contains 2 to 14 p.c. of HCN.

In practice, the use of HCN. is confined to the insect pest of plants such as the scale pests of citrus trees, and was extensively used in the orange orchards of California in 1893. It was also used for the destruction of bugs in certain prison buildings of Africa in 1901. Lastly, its use has been suggested by Lieut. Col. Glen Listen for the destruction of rats and fleas in India in April 1920, although United States of America has used this method for the destruction of rats on board-ships in American ports since 1910. Stock and Monier-Williams have shown in 1922 that this method of fumigation by means of HCN. gas is very efficient and free from risk of fire. But the great disadvantages of using hydrogen cyanide or hydrocyanic acid are:—the deadly nature of the gas, the small amount of warning given by the fumes and the difficulty of enforcing safety regulations. Another disadvantage is that mattresses, cushions, pillows and food-stuffs also absorb the gas to a considerable extent and may subsequently be a source of danger to life.

George Newmann declared in 1923 that there was no doubt as to the efficiency of fumigation by hydrogen cyanide for the destruction of rats and fleas on board-ships but there was no doubt also as to its danger to the lives of persons engaged or associated with the process. Hence, Great Britian is slow to adopt this method owing to the deadly nature of the gas and the risks incurred.

The method I have suggested for the destruction of fleas, and thus save human beings from plague infection by the use of tobacco leaves has the same hydrocyanic acid as an agent; but the quantity of the acid which emanates from leaves is so small that not only no chemical re agent known can detect its presence, but it has no bad effects of any sort on animal life, yet it is just enough to destroy fleas. Besides, for the production of HCN. artificially, special apparatus is required and skilled men to use it, but in the case of tobacco it is not so.

Hence tobacco in destroying fleas possesses a very efficient weapon recognised and advocated by all for destruction of insect pests in the form of HCN. Tobacco has one great advantage over HCN. prepared artificially in not being injurious to animal life and being devoid of danger to human beings. Hence my suggestion for using tocacco for the prevention of plague deserves consideration and further trial.

The Antiseptic

MARCH, 1926.

THE NEW DIRECTOR-GENERAL.

With the elevation of Major-General T. H. Symons to succeed Major-General Sir Charles MacWatt as Director-General of the Indian Medical Services, a long-standing grievance of the Indian medical service in Madras is redressed, and we congratulate the Major-General on being the first recipient of such high distinction from this Presidency. But the importance of the event is eclipsed in the speculations that are afoot as to the probable successor of the Major-General as Surgeon-General with the Government of Madras. In the ordinary course of things, if seniority and fairness are to be the sole guides of the powers-that-be in making the choice, the claims of Lt. Col. M. N. Chaudhuri, the present Superintendent of the Madras General Hospital, stand unrivalled and indisputable. A senior member of the Indian Medical Service, Lt. Col. Chaudhuri has made his mark as a conscientious and able officer, meriting recognition at the hands of the authorities. But alarming rumours are afloat that no trick is considered too mean by one section of the profession to prevent the catastrophe of an Indian being elevated to that high and exalted office, and we are told that the suggestion has been seriously put forward to recall from leave an European officer with a view to his being enabled to be raised to this place. Even here, the shot is wide of the mark, for, the officer whose name is mentioned as a proper and fit person for the place, obtained Commission on the same day as Col. Chaudhuri, and nothing but melancholy meanness can dictate such a course. The administration of the Medical Department is in the hands of a representative of the people, and if his professions in the matter of the Indianisation of the Services is sincere, his path is clear and well-chalked

out. But whether he will stick up to his professions or yield to the "irresistible forces" of reaction remains to be seen, and if he does give way, as he had easily been prone to on many previous occasions, it can only be construed as a calculated insult levelled against the Indians and a humiliating confession of weakness. We sincerely hope and trust that the Minister will stand erect, resist pressure from behind the screens and vindicate the cause of justice and fairplay.

HELIOTHERAPY.

From the very earliest times of which we have any record it is evident that the value of sunlight as a healing agent has been realised by mankind. Sun worship has prevailed in ancient civilization such as in Mexico and Peru. The Israelites, Egyptians, Syrians and the Romans and the ancient Indians are all mentioned as having worshipped the sun,

At the one end of the visible spectra are the infra-red or the heat rays and at the other are the ultra-violet, actinic or chemical rays. Beyond this ultra-violet region lies a region, about which, we have at present no definite knowledge. This is again followed by the region of the x-rays, and the radium organic rays. These various kinds of rays are collectively called Radiant Energy.

Therapeutic effects of the solar radiations are due chiefly to the ultra-violet rays. These rays are non-luminous and invisible to the human eye. They are absorbed both by the cells of the skin and the blood circulating the capillaries of the skin. They have thus a local as well as general action. Exactly how these ultra-violet rays are assimilated is still a matter of speculation and much research work requires to be done before any definite conclusions can be formed. But it is tolerably certain that they have a profound effect upon the metabolism of the body. Their effect is synthetic and they stimulate the vital processes of the body through their action upon the blood.

To discuss the sources of ultra-violet rays and the technic of artificially producing these rays is perhaps beyond the scope of this article. We shall only consider how best ultra-violet rays could be utilised in the treatment of diseases.

In diseases of the skin, ultra-violet radiation has the great field of usefulness. The number of contributed articles which have repeatedly appeared in the medical press during the past few years, may perhaps testify to the value of the radiation in different skin diseases. The healing of septic wound, purulent sinuses, chronic ulcerations, is greatly facilitated by ultra-violet radiation. The different syphilitic skin eruptions—primary chancre, condylomata, tertiary ulcerations, suppurating inguinal glands are all favourably influenced. X-ray burns are encouraged to heal by these rays and even oldstanding x-ray dermatitis can be considerably benifitted. Cases have been reported of superficial corneal opacities clearing under the treatment through closed lids of ultra-violet radiation. Lupus, rodent ulcer and perhaps chronic patches of psoriasis, either treated by ultra-violet radiations alone or together with x-rays improve considerably. Other skin lesions which have been successfully treated by ultra-violet radiations are acne, furunculosis eczema, prurigo, intertrigo pruritis ani, ringworm, both of scalp and body. The technic in most skin diseases is the same. Repeated small doses should be aimed at in acute conditions and large doses at longer intervals in chronic and stubborn cases.

Ultra-violet radiation is of great value in the treatment,—sometimes alone but more often with diathermy radiant heat,—of many varieties of rheumatism. It has also been of great benefit in cases of infantile rickets and other diseases of faulty assimilation, where, although it cannot enable the body to synthetize its own vitamines, yet it can enable an otherwise insufficient amount of vitamines in the diet to satisfy the baby's demands.

NEW METHOD OF DIAGNOSIS AND VACCINE TREATMENT OF LEPROSY.

At a meeting of the Royal Society of Tropical Medicine and Hygiene as reported in the Lancet, Dr. J. Hasson said that the present methods of treating leprosy were far from satisfactory in many instances. The results of chaulmoogra oil, hydnocarpate, the morrhuates, and amino-arsenophenol were contradictory. This was partly due to the metamorphic possibilities of the objective

symptoms of leprosy, the variance of which, was probably accounted for by the varying degree of intoxications of the patients. No leprologist could boast of having witnessed true cures with any form of therapy. He had therefore, investigated a vaccine method, using a stock autolysate containing 15,000 million of B. pyocyaneus and about 5,000 million of Hansen's bacillus to 2 c. c. of physiological saline. Leprous patients had blisters induced on them with carbonic acid snow; these were emptied 24-36 hours later, and the sera of different forms, nodular, anæsthetic and mixed, were incubated together at 36° C. for a period of from 50 days to three months. A mixed culture of B. pyocyaneus was then added to the serum (previously rendered incoagulable by the addition of a sterile solution of 2. 5 per cent. sodium citrate), and the whole was centrifuged for 20 minutes. The requisite quantity of distilled water was then added, the bacilli counted, and the solution put up in 2 c. c. ampoules. A symptom of very great value in early diagnosis was a subnormal temperature of 1° or 2°. It was because of this temperature that the bacilli were incubated at 36° C. only.

The method of Row, of Calcutta, using three months' old Koch's bacillus, differed only in his use of non-specific, simple, unmixed autolysate, and was undoubtedly sound. The action of both vaccines was explained by the formation, in the liquid of the vaccine, of anti-bodies excreted by the bacilli themselves. Besredka, of the Institute Pasteur de Paris, had shown that infected wounds cleared up rapidly when filtrates of old cultures of the causative organism were used therapeutically, even in cases where fresh vaccines had failed. Besredka had used specific filtrates only, but the virtue of Row's non-specific method in leprosy was easily accounted for by the close relation between B. tuberculosis and B. lepræ. The B. pyocyaneus was included in order to induce an increase of temperature capable of "dislodging" the bacilli. Injections might be given intravenously or subcutaneously. Intravenous injection produced a violent reaction in one or two hours with shivering and rise of temperature upto 104° to 105°F. Twenty-four hours later the patient would be quite well. After subcutaneous injection the temperature rose only a degree or two. After the third dose the nodules rapidly flattened and dispersed, while the achromic and anæsthetic patches became smaller and disappeared in 2-4 months. There had been no case of relapse after 18 months, and one

case of maculo-anæsthetic leprosy treated 14 months ago remained clinically and practically cured, the examination of excised tissue, the Klinger-Hertzfeld reaction with Joltrain's antigen, and the Bordet Gengou reaction, all being negative.

CURRENT TOPICS.

GYNÆCOLOGY AND OBSTETRICS.

Conservative Treatment of Eclampsia.—S. Bermann (Boston Med. and Surj. Journ., January 7th, 1926, p. 7) compares the Stroganoff and Rotunda methods of the conservative treatment of eclampsia, and gives an account of his own modification of the former. Absolute quiet in a darkened room is provided. On admission, the patient receives a quarter of a grain of morphine, followed by the Stroganoff routine of chloral hydrate, morphine, milk, and saline solution. All examinations are made under gas and oxygen anæsthesia, but so far as possible any disturbance of the patient is avoided. Magnesium sulphate is given intravenously after each convulsion, the dose being 20 c.c. of a 10 per cent. solution, and oxygen is administered during the convulsion. Magnesium sulphate is also given if the patient becomes restless some hours after a convulsive attack. Bermann recommends having available at 25 per cent. solution of calcium chloride, 10 c.c. of which can be given intravenously in the event of respiratory embarassment after the magnesium sulphate injection. He has not experienced this complication himself, however. If the patient is comatose and not taking fluids by the mouth, he recommends the intravenous injection of 1 litre of a 5 per cent. glucose solution every six hours. He does not think venesection necessary as a general rule, and unless there is no response to treatment, he postpones delivery of the patient until the os is fully dilated and convulsions have ceased. Transfusion may be necessary after delivery if shock supervenes.

The Treatment of Placenta Prævia.—Aleck Bourne (*Clinical Journ.*, p. 488). Placenta prævia is a treacherous condition, because its earliest symptom is usually only slight bleeding. The temptation to temporize is great, especially if the pregnancy is not matured and particularly if it is the first. But the condition is too serious to temporize with and all cases of doubtful placenta prævia should be treated as if they were such. Possibly labour will be induced unnecessarily, but that is a lesser evil than not to induce labour if placenta prævia is present.

There are three principles of treatment;

1. The pregnancy must be terminated at once by some means which will arrest bleeding.

2. For this purpose bougies are useless.

3. Delivery must not be hastened, or must not be forced more than is absolutely necessary.

There should be a slow delivery and, if possible a spontaneous one. A patient who has already lost blood considerably cannot stand a quick delivery. Quick delivery by manual dilatation of the cervix is often fatal.

The treatment depends firstly on the patient's general condition. If she is in a good condition there is a greater choice of methods. But if blanched, the choice is limited, and to do too much will probably kill her. She is in a much graver condition than a patient blanched by post partum hæmorrhage, because she has still to stand the stress of labour.

Next comes the position of the placenta. It either covers the os—in other words it is so placed as to prevent the finger from rupturing the membranes—or it does not. The placenta may partly cover a very small os, but when the os is dilated to the size of a two-shilling piece it will cease to be central and become marginal.

The various clinical types, can be classified into three or four groups. In the first group, the patient has lost little blood before labour and the placenta is central. She is not in immediate danger, but no time should be wasted. With a live baby, and with central placenta prævia Cæsarean section is the best treatment, whatever the presentation. But if the fœtus is so so small as not to be likely to survive, possibly Cæsarean section may not be a good treatment.

In the second group the placenta does not cover the os, but can be felt. Again one would advise Cæsarean section if the baby is alive and the patient is in a good condition. But if the placenta cannot be felt, that is, if its position is lateral, Cæsarean section is not justifiable. If the placenta is non-central, vaginal methods are better. The method depend on the presentation. If a breech, pull a leg down. If a vertex presentation, plug. If the leg is over the os, pull the leg down. It may be necessary to dilate the cervix, and with two fingers that is easily done. If it is a case of slight bleeding before labour, and the placenta cannot be felt at all and the presentation is a vertex, quite good treatment, particularly for nurses and unaided midwives, is simply to rupture the membranes and put on a tight binder. As an alternative, if the placenta cannot be felt, and the head is engaged, it is generally best to rupture the membranes and put on a tight binder.

The third group is the blanched woman with a rapid pulse, and therefore in bad condition. Here again we have the same sub-divisions—central and non-central. Cæsarean section should not be considered. To

operate on a blanched patient with a rapid pulse of, say 140, will probably be fatal. The abdominal operation must not be done until her condition is sufficiently recuperated. If the placenta is central the problem is very difficult. The woman is blanched and so shocked that she can stand only a minimum amount of manipulation. She is not in labour, and her shocked condition will probably delay the onset of pains and the placenta over the os, prevents rupture of the membranes, unless you detach more of it and so cause more bleeding. The best treatment is plugging. Under anæsthesia the os must be exposed by a speculum, and a pair of Spencer-Wells or blunt forceps pushed up through the placenta to let out the fluid. Do not put the finger up through it, because it is too blunt to easily break through it, and bleeding will probably be produced, and every ounce of blood lost is serious. After the fluid is let out, pack the vagina tightly with gauze, as described below. Never mind whether it is a breech or not. Plugging will probably do less damage than trying to bring the leg down; because the os is small and cannot be dilated unless two fingers are got through, which is necessary to bring down the leg. Bringing the leg down may be a very complicated manœuvre, and likely to start bleeding, which possibly would not matter if the woman was in a good condition.

In a non-central case with the patient blanched there is not quite the same danger in dilating the os and getting the fingers through to bring down the leg. Therefore, if there is a breech presentation it is best to dilate the cervix and bring the leg down. The point is whether or not bringing the leg down will cause bleeding. It is not so likely to do so here as with a central case. It may be necessary to do something else later on. A vertex presentation may be treated by plugging or version.

Take, again, the central case. Say you have plugged, after 24 hours the condition is considerably improved; there are no labour pains, the placenta is of course still covering the os, and the os is very small. If the condition now is comparatively good, probably the best treatment will be Cæsarean section, which may give a live baby without the risk of vaginal delivery.

In the next type of case the patient is in labour and therefore has a dilated os. Here, there are again two clinical groups. In one, which is very common, there is slight bleeding, and the woman's condition is comparatively good. In such a patient, who is progressing through labour, it is almost certain that the placenta cannot be very low. It certainly cannot be central, it is unlikely to be marginal, and most probably it is rather high—i.e., lateral. In most of those cases where bleeding is slight through the course of the labour, the placenta is out of reach. In these case it is quite enough, if the membranes are not ruptured, to rupture them

and put on a tight binder, and labour will be accomplished without any loss of blood.

In the next group there is severe bleeding and the condition is bad. You do not want to do anything to start pains. The treatment is only to stop what bleeding there is. Here, again, treatment will depend on the presentation. If a breech, it is easy to pull the leg down, which will stop the bleeding. If a vertex, plug and apply a tight binder. The vertex will be high, because the placenta will be either central or marginal. It is not enough, therefore, merely to rupture the membranes and put on a binder.

THE OPERATION OF PLUGGING.

The patient must have an anæsthetic, and must be in the lithotomy position. First rupture the membranes, then pass the catheter and disinfect the vagina. For this purpose the writer uses violet-green or flavine.

To plug, pass the whole of the left hand into the vagina, right up to the vault. With the right hand pass in the gauze roll. Use the large size. With the right hand feed the gauze into the left, and place it right round the cervix. It is surprising how much gauze the vagina can hold. Get a large quantity in and pack it very tightly and systematically around the cervix in the fornices of the vagina.

When the gauze is *in situ*, turn the patient on to her back, put on a tight binder, and then a "T" bandage. This will keep the packing in place. You can leave with absolute confidence that she will not bleed any more. This is a sure way to arrest all bleeding, and it involves a minimum of manipulation. Hence its great value. If the patient is blanched and shocked, it will stop the bleeding until such time as she has recovered enough to develop pains. If she is not shocked or blanched at all, the pack will stimulate the rapid onset of pains.

Plugging has disadvantages. The gauze, even though soaked in flavine, is almost certain to produce some infection of the vagina. If it is not removed after 24 hours it is apt to be rather offensive. Therefore, the gauze must be removed and the vagina disinfected by douching again after 24 hours. It is a disadvantage to have to give another anæsthetic after 24 hours.

Twenty-fours hours may pass after the operation of plugging and there may be no pains. Then you have to remove the plugging and re-disinfect the vagina. In a further 24 hours still no pains may appear, and it may be necessary to remove the pack again. That is a serious disadvantage, but it rarely happens if the membranes have been ruptured and the fluid has escaped. If the membranes have been ruptured, you may have a patient packed for several days and still no pains.

There are some minor disadvantages. Some discomfort is caused as the patient cannot micturate. She must be catheterized.

The chief indications for plugging are, first, a vertex presentation, because you can so easily plug against the vertex. The breech presentation is not favourable to plugging. The vertex used to be considered the most difficult presentation for placenta prævia, because it generally meant that the child might have to be turned, and version might not only be difficult, but dangerous, owing to bleeding being set up by the manœuvre of turning. Sometimes version is very difficult. But if the vertex is well down in the pelvis and the membranes are ruptured, and the plug is inserted against it, you can, as already said, guarantee the arrest of the hæmorrhage. If the vertex is high up and small and movable, and the os will admit two fingers, then it may not be so favourable a presentation to plug against. Such cases might be better treated by version.

Cæsarean section had great vogue in ante-partum hæmorrhage, until it was found that the results were scarcely as good as those by treating the patient vaginally. Cæsarean section is particulary advantageous for patients in good condition, who would probably lose considerably if delivered by the vagina, and who have a live baby at or near maturity. it is not the treatment for an anæmic or blanched woman. The dangers of the operation are, firstly and obviously, the shock added to that of the anæmia. But there is another danger. Suppose that the baby has been removed. Then one sweep of the hand has rapidly detached the whole of the placenta, leaving the placental site denuded of the placenta suddenly. While the stitching is being carried out, even though the fundus of the uterus may be firmly contracted, blood may be pouring away from the placental site unnoticed. The bleeding takes place from the lower segment, and is difficult to control, except by holding the uterine arteries low down on the pelvis. If the patient is delivered by the vagina, a small portion of the placent is detached, then a little more, but never is the whole placenta detached at once. When only a small portion of the placenta is detached, only a few vessels open up at once, and therefore the bleeding is not serious. But when the whole placenta is suddenly detached, in Cæsarean section, sinuses are opened at once and the blood pours away. That is serious. Another danger of the operation is that of sepsis, owing to the shock and anæmia.

If there is a breech presentation, utilize it by bringing the leg down. There is sometimes difficulty in bringing the leg down. The os must admit two fingers, and you must have manipulative skill in catching the food with those two fingers. Get at the ankle with the index finger, and at the toes with the central finger, and point them down into the cervix, and very carefully try to draw the foot through. If it is a small baby

grasp the foot with the volsellum and pull it through. It is not advisable to use the volsellum when the baby is likely to survive, because of the injury caused to the foot. Having brought the leg down the chance of having arrested the bleeding is almost as good as that by plugging.

The following shows in tabular form the preceding teaching:

- **Patient not in labour**
  - Slight hæmorrhage
    - Placenta central: Cæsarean section.
    - Placenta non-central
      - Can be felt: Cæsarean section.
      - Cannot be felt
        - Breech: Pull down leg.
        - Vertex: Plug, or, if head engaged, rupture membranes and apply binder.
  - Patient blanched
    - Placenta central: Plug until recuperated, then either vaginal delivery if pains are good, or, Cæsarean section.
    - Placenta non-central
      - Breech: Dilate cervix and pull down leg,
      - Vertex: Plug, after rupture of membranes.
- **Patient in labour (os dilated)**
  - Slight hæmorrhage: Rupture membranes and binder.
  - Patient blanched
    - Breech: Pull down leg.
    - Vertex: Plug, after rupture of membranes.

The writer condemns Champetier de Ribes' bag. It is liable to leak and to burst, and when it bursts sepsis is liable to occur. The os must admit two fingers, and when you get in the bag it is often likely to produce a great deal of bleeding. If the placenta is central, bleeding is certain to be excited by putting in the bag, and can be alarming. When the placenta is non-central you just rupture the membranes and insert the bag, and there may be no bleeding. The bag will arrest the bleeding while it is *in situ*, as surely as plugging or bringing down the leg. If the bag, is retained more than four or five hours there will probably be no bleeding after it is expelled. But, if the bag is expelled within an hour or two, then its expulsion is likely to be followed by dangerous bleeding. If the bag is *in situ* for a considerable time, there has been given sufficient time for clotting in the placental sinuses. You should be on the spot when the bag comes out, as there may be further hæmorrhage requiring internal version. The plug is *in situ all* the time the head is going down into the vagina, and being pushed out by the uterine pains. But if the bag is expelled the placenta is still perhaps above the brim, and this means another manipulation, namely, version, or pulling the leg down.

Finally the writer emphasizes again the importance of not hurrying delivery. Let the patient have slow pains, or no pains at all, but do not hurry delivery. The essential item in the treatment is not the delivery of the baby but the arrest of the bleeding. This will be done by plugging or bringing the leg down, or by some other form of treatment. Then leave the patient to deliver herself when she will.

SURGERY.

The Treatment of Keloid.—P. Degrais and A. Bellot (Presse Med, November 28th, 1925, p. 1581) described the factors which predispose to keloid, which include a lymphatic area and a tendency to seborrhoea; they then describe three methods of treatment. The first is surgical; its success is dependent on the extent and situation of the growth and it may be followed by recurrence; after-treatment by radium is recommended. The second method is to attack the scar directly by such methods as scarification, electrolysis, escharotics, or carbonic acid snow. Most of these methods are painful and can therefore only be applied to small scars. The third method is the one of choice and consists of either x-rays or radium, the latter being preferable because it is more easily controlled. The dose will depend on two factors, the depth of the scar and the tolerance of the patient. The object is to penetrate to the base of the growth and at the same time to avoid reaction in the adjacent tissues.—(*B.M.J.*)

Diagnosis of Acute Pancreatitis.—R. R. Cranmer (Minnesota Med. M, November, 1925, p. 675) states that during the last few years there has been a great increase in the number of reported cases of acute pancreatitis but that a pre-operative diagnosis is rarely made, since there is no one definite pathognomonic sign or symptom. Moreover, this condition is most often seen in persons who have previously had severe abdominal disorders, and who need immediate surgical intervention without waiting for a definite diagnosis. The author points out that of the five cases of acute pancreatitis which he reports, one was diagnosed pre-operatively as perforating duodenal ulcer, one as stone in the common bile duct, and another as empyema of the gall bladder. He states that the onset of symptoms usually occurs soon after a heavy meal, and takes the form of a sudden acute pain and tenderness in the epigastrium, generally a little to the left of the mid-line. This is accompanied by continuous vomitting of food, bile, and mucus. The upper abdomen is slightly distended, resistance is not sharply defined, the pulse is weak there is collapse, and sometimes cyanosis. After a few hours the epigast-

ric swelling becomes definite, and jaundice may appear if there is obstruction of the ampulla of vater due to gall stones, swelling of the duodenal mucosa, or other causes. The patient is usually constipated; later there is peritonitis, abdominal rigidity, marked distension of the abdomen, rapid and thready pulse, and the patients complain of intense thirst. Then follow rapidly delirium, coma and death. If an abscess ruptures into the stomach or bowel, pancreatic detritus may appear in the vomit or stools. The urine may contain a small amount of sugar, while the blood sugar may remain normal. Acute pancreatitis has to be distinguished from perforated gastric or duodenal ulcer, perforated gall bladder, poisoning by irrtiants acute intestinal obstruction, and stone in the common bile duct. There is no pathognomonic sign or symptom of acute pancreatitis, but this possibility should always be remembered in all acute conditions of the upper andomen in which the symptomatology does not definitely indicate one of the more common disorders of this part.

The Use of "Bipp" in Osteomyelitis.—A. P. Mackinnon (Canadian Med. Assoc. Journ., November, 1925, p. 1222) states that the treatment of osteomyelitis is still far from satisfactory and urges the more frequent use of bipp. He believes that few cases of osteomyelitis are recognized by the general practitioner in the early stages, when they might be cured by simple drainage, and it is not until there are present discharging sinuses, bone cavities, and sequestra that the patient is referred for surgical treatment. At this stage MacKinnon uses bipp; the wound is thoroughly exposed and all sinuses traced to their origins. Sequestra are removed, the walls of the cavity levelled so as to allow the soft parts to fall in, or the cavity filled with fat grafts in order to leave no dead space. Bleeding must be stopped as far as possible, the wound thoroughly swabbed with alcohol-soaked gauze, and bipp then applied so as to leave a thin smear, the wound being closed in layers without drainage. Dressings were usually not removed for ten to fourteen days after the operation, when the stitches were taken out; this eliminated frequent painful dressings. MacKinnon states that there is no danger of serious poisoning, but healing by first intention has not been so frequent in his cases in those reported by Rutherford Morison.—(*B.M.J.*)

Treatment of Hæmorrhoids by Diathermy.—P. Meyer (Journ. de med. de Paris, September 5th, 1925, p. 760) states that he had frequently noticed that patients who were undergoing treatment by diathermy for various abdominal conditions such as enterocolitis, and were at the same time suffering from hæmorrhoids, derived considerable relief from their anal discomfort as the result of treatment. He therefore decided to make a systematic use of the trans-abdominal application of the high frequency currents for the treatment of hæmorrhoids. He has now employed the method in 22 cases of internal or external hæmorrhoids in the acute or sub-acute stage. In all but one case the treatment was successful. The technique is as follows: The patient lies in the supine position with a large plaque on the abdomen and a posterior plaque in the upper dorsal region; 2,000 milliamperes were used for the first application, followed by 2,500 and 3,000 milliamperes for subsequent applications. The duration of the treatment was ten minutes for the first sitting and was subsequently increased by five minutes at a time to forty minutes. Twenty applications were given—one every other day.—*B.M.J.*

Injection Treatment of Varicose Veins.—Meisen describes with illustration his extensive experience with injection of sodium citrate or sodium salicylate to induce thrombosis and obliteration of the lumen of varosis veins. His experiments on horses and laboratory animals confirmed the even and rugular thrombus that formed and its tight clinging to the wall. These favourable findings were reproduced in fifty clinical cases. Eczema and leg ulcers of many years' standing healed promptly one leg ulcer has a twenty-four years' history. The cure was complete with from two or to twenty-five injections of the 20 to 40 per cent. solution of sodium citrate. In five cases ascending chemical phlebitis was observed. It was arrested by proximal constriction or staying in bed. Otherwise this obliterating treatment must not be applied to bed-ridden patients. He warns that it requires skill and practice, but adds that it seems destined to supplant operative measures entirely in treatment of varicose veins.—*B.M.J.*

MEDICINE.

The Symptoms of Intestinal Tuberculosis.—Erickon R. J., (Amer. Rev. Tuberc., Sept., 1925, xii 1.) Intestinal tuberculosis as a complication of pulmonary tuberculosis occurs far more often than it is diagnosed. It is known to occur in some 75 per cent. of autopsies on pthisis. This lack of early diagnosis has led to the result that the prognosis is usually exceedingly bad. It is hardly likely, Dr. Erickson thinks, that a sharply-defined and easily-recognised early symptomatology will ever be discovered. The most that can be hoped for is suggestive evidence. In this paper he gives his conclusions in a study of 100 cases of intestinal tuberculosis complicating pulmonary tuberculosis.

In 59 per cent. of these the intestinal disturbances occurred by the end of the second year, and in 81 per cent by the end of the third year. In 58 per cent. there was a history of previous intestinal symptoms, most commonly chronic constipation and indigestion. There was an insidious

onset in one-third of the cases and clearly-defined onset in two-thirds. Constipation was a marked feature in the picture at the onset of the case. Diarrhœa was present in 47 per cent. occurring somewhat more frequently in the morning. Bleeding was found in ten per cent, and was highly suggestive symptom when proved not to be due to hæmorrhoids. Diarrhœa of more than a month's duration suggests a positive in the proportion of six to one. Alternation of constipation and diahrrhœa was found in 12 per cent. ; it had no special diagnostic significance.

General digestive disturbances were the most frequent initial symptom. They varied considerably in type, but the most usual were marked loss of appetite or aversion for food distress and after meals "sour stomach." These symptoms however were not essentially different in case of uncomplicated pulmonary disease with a highly suggestive feature in 17 per cent.

It is included, therefore, that the careful study of the symptoms can be of considerable help, though the differentiation of the positive from the negative case is to be made more in the severity, multiplicity and duration of the symptoms than on their kind.

Symptoms of Thrombosis of Coronary Arteries—In sudden thrombosis of large branches of coronary arteries McNee says there may occur in patients who survive the immediate shock, a very remarkable clinical syndrome. The main clinical features are as follows: (a) agonizing pain of varying distribution which lasts much longer than in the usual attack of angina pectoris; (b) dyspnœa which may be extreme (c) a peculiar color and appearance of the face; (d) immediate sign of acute cardiac failure—cardioac, pulmonary hepatic and renal, (e) one sign which is inconstant, but almost pathognomonic in association with a suggestive history or group of symptoms, in a localized pericardial friction rub (f) fever and polymorphonuclear leucocytosis (g) various abnormalities in the electro-cardiogram. A great many difficulties in diagnosis may arise if the pain is localized to the upper part of the abdomen and an acute abdominal disease may wrongly be suspected. The course and prognosis of this serious cardiac disease is very variable. Many patients die at once or within a few weeks, but increasing experience in recognition of the condition has shown that some patients may survive in fair health for a number of years. The recognition of the clinical syndrome should be fairly easy in patients who have previously suffered from cardiac complaints such as angina pectories. The real difficulties in diagnosis arise when the coronary occlusion is the first evidence of cardiac disease in a previously healthy patient.

Vitamin B, in Maize Kernel.—The discovery that vitamin B is not confined to any one part of the wheat kernel, but is distributed throughout the entire grain, has called for comparative investigations of other cereals. An attempt was made by Croll and Mendal to determine the mode of distribution of vitamin B in the structural parts of the maize kernel. Methods were devised for separation of the maize kernel into its structural parts. Feeding experiments with the portions of the yellow maize kernel showed that practically all of the vitmin B of the whole grain is found in the embryo. The endosperm contains practically no vitamin B, while the bran includes an extremely small amount, if any of this factor.

Rheumatic Fever.—Swift points out that there are three diseases causing great economic loss, tuberculosis, syphilis and rheumatic fever. Not only are the early acute stages of these maladies time-consuming in a period of life when the victims are of greatest value to the c ommunity but their late manifestations, a consequence of their inherent chronicity, cause many persons to be so severly crippled that they are often less efficient productive units. The clinical history and progress of rheumatic fever are discussed, and one point in particular is stressed in the treatment; the period of rest is needed no longer than is usually recognised or enforced. The average period for seventy-two cases in the Rockefeller Hospital was about 100 days. The shortest period was fifty days and the longest 254 days. Swift says that if general hospitals kept their patients with rheumatic fever for periods similar to this there would be only rheumatic fever patients in the wards during the winter and spring months. The question to be met is; "How can these patients be given proper periods for rest?" In this one point of proper provision for rest cure the institutional and sanatorium treatment of tuberculosis has pointed a way. Perhaps they may come when the tuberculosis problem will have been solved completely and these sanatorium will be converted into hospitals for the treatment of patients with rheumatic hearts; but it is to be hoped that before that time provision for the proper care of a large group of these patients will have been made. A few heart hospitals in which proper study of these problems could be both intensively and extensively carried out would do much toward formulating a definite plan in the treatment of a condition which, up to the present, has been permanently benefitted but little by the methods now in vogue.

THERAPEUTICS.

Indications for Diathermy Treatment.—F. W. Ewerhardt (Journ. Amer. Med. Assoc., October 10th, 1925, p. 1111) points out that heat transmitted by convection and conduction barely penetrates beyond

the dermis, that radiant heat goes a little deeper into the tissues, but that diathermy, in which the heat results from the conversion of electricity, is a means of warming the deeper tissues, since the high frequency current passes directly from one electrode to the other and affects whatever tissue intervenes. The result of the application of heat to a part is to control muscular spasm, relieve pain, and increase the arterial flow. Ewerhardt has given 70,000 treatments by diathermy at the Washington University School of Medicine, and has found it to be of great value in the early stages of fracture and joint injuries, since by the relief of spasm better apposition is possible. Moreover, the increased blood supply promotes the absorption of exudates, and lessens the tissue tension due to extravasated fluid. By means of diathermy he has materially shortened convalescence after fractures, and suggests its use in post-operative bone and joint conditions, acute sprain, fractures, bursitis, acute and chronic arthritis, contractures, and fibrositis. He considers that diathermy is contra-indicated where there are localized pockets of pus without drainage, when there is danger of hæmorrhage, in tuberculous joints, and in suspected malignancy.

Absorption Treatment of Wounds.—O. Acklin (Zentralbl. f. Chir., October 31st, 1925, p. 2470) has made experimental studies of the treatment of wounds infected by earth containing tetanus spores. He used various absorbents, including colloidal aluminium salts, concentrated sodium silicate solution, and blood charcoal. The aluminium preparations were followed by healing without abscess formation, and there was little or no pain. Sodium silicate treatment was followed by sepsis, but when blood charcoal was used the wound healed without suppuration or pain. Acklin concludes, therefore, that it is impossible to save the life of an animal with a very virulent infection of a wound by means of purely absorptive methods. He found that charcoal gave more favourable results than disinfectants containing chlorine.

The Use of Urea as a Diuretic in Advanced Heart-Failure.—Crawford, J. Hamilton and McIntosh, J. F., (Arch Int. Med., Oct., 1925.) The authors remind us that at one time urea rention was considered the causative factor in uræmia. However, with the advance of clinical chemistry it became established that if the function of the kidney was good, urea could be given to patients for prolonged periods of time with impunity.

The cases selected for treatment were those suffering from advanced cardiac decompensation which has responded only partially or not at all to the methods usually employed in the treatment of cardiac œdema. The

series included four cases of mitral stenosis with auricular fibrillation, two cases of mitral stenosis, one case of the aortic disease with auricular fibrillation, and one case of exophthalmic goitre with auricular fibrillation

Urea was given with a view to re-establishing a normal water balance by maintaining an adequate urine output, and also when slight œdema has collected to bring about its removal.

The substance was given in a small quantity of water a short time after a meal as a gastric disturbance was less likely to take place if it were given at this time. Urea has a peculiar metallic taste and is not pleasant to take. The patients, however, soon become accustomed to it. In four of the cases 30 grms. a day were administered in divided doses of 15 grms. One dose was given at 8–30 a.m. and the other at 4–30 p.m. In four other cases the effect of increasing the quantity of urea was studied. At first 30 grms. a day was given; this was increased to 45 grms. a day and in two cases to 60 grms a day.

In the case treated, a marked improvement in the clinical condition of the patient took place which could be assigned only to the action of urea. The treatment succeeded in maintaining an adequate urine output and also in removing œdema. As soon as the administration of urea was stopped, the urinary output immediately fell and the clinical condition became worse. When treatment was resumed an improvement again took place. The increase in urine output varied with the dose and followed closely the curve of urea excretion. With continuous administration, the daily urine volume was maintained at an almost constant level. The response after administration was rapid, but the effect passed off in a short time unless the dose was repeated. The changes in urine volume and in urea excretion were dependent on the concentration of the urea in the blood. In several of the cases there was a subnormal index of urea excretion which seemed ascribable to advanced heart-failure. The index tended to improve with urea administration, along with the general improvement in the clinical condition. Toxic symptoms of any significance did not take place. The writer concludes by suggesting that urea is a useful drug in cases of heart-failure with œdema in which the treatment of the cardiac condition has failed to remove the œdema or maintain an adequate water excretion.

The Value of Iron in Anæmia.—Charles Spencer and Ersi Harold N., (*Arch. Int. Med.*, September, 1925.) The question as to whether inorganic iron is absorbed into the system and converted into hæmoglobin has long been a debatable one. Some research workers have been convinced that iron is converted by the body into hæmoglobin, while others, such as Wgipple and his associates, feel that inorganic form is of no value in simple anæmias. The authors in this article carried out their investigation on large number of rats and dogs, and used the quantitative

spectrophotometric determination of hæmoglobin rather than the usual color-metric methods.

Their method of attacking the problem was:—

(1) To administer medical iron orally to rats with suitable controls; in the other group to administer iron subcutaneously, and to compare the amount of hæmoglobin in the blood and tissues of these with a group of non-injected controls.

(2) To repeat these experiments in rats rendered anæmic by single or multiple bleedings.

(3) To determine the effect on the blood of young rats of medicinal iron administered to the mothers during the periods of gestation and lactation.

(4) To control the result of the foregoing by similiar experiments on a different type of animal, as well as to study the effects of intravenous injections of iron, for which purpose, the rat is ill-adopted. The diet used was the standard case in diet of Osborne and Mendel, yeast being added to carry vitamin B. The iron-free diet was obtained by simply omitting the ferrous lactate from salt mixture used in making up the foregoing diet. The latter is really an iron-poor, rather than an iron-free diet. The time for carrying out the experiments varied from seven to eight months.

Their conclusions were as follows:—

(1) Inorganic iron whether given by mouth, subcutaneously or intravenously is absorbed and may be especially in the liver and spleen, but is not converted into hæmoglobin. (2) The administration of medicinal iron to pregnant rats does not increase the hæmoglobin concentration in the blood of the offspring. (3) In the experiments on dogs it is shown that large doses of iron given hypodermically, not only do not increase the hæmoglobin concentration, but have definitely toxic effects. (4) Animals made anæmic by one or several large bleedings do not recover any more rapidly when inorganic iron is given either orally or subcutaneously. (5) The efficiency of food iron is very pronounced, and animals on a diet containing food iron only, recover rapidly from hæmorrhages that remove and amount of iron greater than exists in the entire body outside the blood. (6) In the light of the experiments carried out, the administration of inorganic iron would appear to be of no therapeutic value in anæmia.—*B.M.J.*

Calcium Chloride as Diuretic.—In cases of cardiac failure with œdema in which constant rest in bed, digitalization and the administration of various diuretics have not resulted in a satisfactory diuresis. Segal and White have found that calcium chloride may be employed as a diuretic. No deleterious effects were observed from the oral administration of calcium chloride, from 10 to 15 grms. daily in any of the cases studied. Crystalline calcium chloride was administered in the form of a solution almost invariably, in 2·5 grms. doses diluted in form 50 to 100 c. c. of water. In experiments on a normal person, dose of 5 grams and 8 grams each were taken. In the majority of cases the daily amount consisted of 15 grms. given in 6 doses of 2·5 grms each at two hour intervals. With the smaller doses the only handicap was the unpleasant taste of the drug; this may be avoided by giving the dry salt in the capsules, each containing 0·5 grms. The larger doses of 5 and 8 grms. causing a burning sensation in the epigastrium which was readily relieved by the patient taking some food and less readily by drinking water. Diarrhœa did not occur in any case; rather was there a tendency to constipation.—*B.M.J.*

Value of Mercurochrome—220 Soluble.—The conclusions reached by Todd as the result of his experimental and clinical observations are as follows: Mercurochrome is a powerful antiseptic of low toxicity, rapid and deep penetrability, and causes little irritation. It does not precipitate albumins. If protected from light it is stable for long periods in physiologic sodium and chloride solution. Its antiseptic properties are augmented by acidity, they are diminished by increased density of salvent and are likely to be less apparent in heavy infections. Various strains of an organism show differences in susceptibility. At acidities near a normality its antiseptic properties are relatively feeble and it is unlikely to be of value in general infections.—*J.A.M.A.*

Luminal in Hypertension.—C.M. Gruber, H.H. Shackelford, and A.M. Ecklund (Arch. Intern. Med., September 15th, 1925, p. 366) have studied the effect of luminal on blood pressure in arterial hypertension in 27 ambulatory and 8 hospital cases. They found that the drug decreased the blood pressure in 85 per cent. of the cases, having the same effect upon both classes of patient but becoming less effective after prolonged administration. Apparently, there was no tendency to the formation of a habit, and the withdrawal of the drug produced no psychic effect or marked increase in blood pressure, which in many instances remained low. The reduction of hypertension was found to be less marked in acute nephritis with cardiac decompensation than in chronic nephritis and arteriosclerosis Since luminal appears to have a cumulative action, short intermission periods are advised, the patient meanwhile being treated on general lines or with sodium nitrite. The authors find, also that the prolonged use of luminal in small doses, or in large doses over a shorter period, may give rise to a variety of toxic symptoms, the commonest of which are sleepiness, asthenia, vertigo, ataxia, and pruritus. No harmful effect on the kidneys followed the use of moderate doses. The average dose was 1½ grains, three times a day; the warning is given that owing to its toxic effect in large doses the drug should not be prescribed indiscriminately. While pointing out that the drug is not a cure, and deprecating too sanguine a view of its usefulness in hypertension, the authors agree that most of the patients improved, felt stronger, and had less headache than previously; only four cases failed to respond. —*B.M.J.*

BOOKS RECEIVED

The following books have been received and the courtesy of the Publishers in sending them is acknowledged. Reviews will be published from time to time. [ED. ANTISEPTIC.]

The Manager of the Antiseptic will be pleased to supply the readers any books acknowledged hereunder, or others at the Publishers' price. When sending their order, the readers are requested to send a remittance for the full value of the book. That a remittance in advance should be requested is no reflection on the credit of any reader of the Antiseptic, but is simply a condition necessitated by circumstances.

General Surgery.—The practical medicine series comprising 8 vols. under editorial charge of Charles L. Mix. Edited by J. Ochsner, M.D., F.R.M.S., L.L.D., F.A.C.S., F.R.C.S., Tr. Hon. Published by the Year Book Publishers, 304, South Dearboen St., Chicago. Vol. II, 1925 Price S. 3·00.

The Commonsense of Health.—By Stanley M. Rinehart, M.D. Published by George H. Doran Co., New York. Price S. 2·50.

The Dentists' Own Book—By C. Edmund Kells, D.D.S. Published by the C. V. Mosby Company, St. Louis, U.S.A., 1925. Price S. 7·50.

Diseases and Deformities of the Foot.—By John Joseph Nutt, B.L., M.D., F.A.C.S. Published by E. B. Treat & Co., 45, East 17th St., New York, 1925.

A Compend of Diseases of the Skin—By Jay Frank Schamberg, A.B., N.D. Published by P. Blackistons Sons & Co., 1012, Walnut St., Philadelphia VII Edn. S. 2·00.

A Compend of Obstetrics Landis.—Revised and Edited by Clefford B. Lull, M.D. Published by P. Blackistons Sons & Co., Philadelphia, X Edition. Price S. 2·00.

Diathermy in the Treatment of Genito-Urinary Diseases with especial reference to Cancer.—By Bud C. Corbus, The Bruce Publishing Company, St. Paul Minneapoles, 1925.

Ultra-Violet Radiation and Actino-therapy. — By Eleanor H. Russell, M.D., B.S., and W. Kerr Russell. E. and S. Livingstone, 16 and 17, Teviot Place, Edinburgh. Indian Agents, Butterworth & Co. Ltd., Hastings St., Calcutta 1925. Price Rs. 7-14-0.

Buchanans Text-Book of Forensic Medicine and Toxicology.—By John E. W. McFall. Published by E. and S. Livingstone, Edinburgh, 9th Edition, 1925. Indian Agents, Butterworth & Co., Ltd., Calcutta. Price Rs. 11-4-0.

Analysis of Medical Jurisprudence.—By M. A. Kamath, M.B. B.S., Lecturer, Medical School, Tanjore, now Municipal Hospital, Chidambaram. Card Board Rs. 3. Calico 3-8-0.

Tripathi's Guide to the Young Medical Jurist. — By Manishankar H. Tripathi, Senior Grade Sub-Assistant Surgeon, Kalyanpur, Kathiawar, 1926. Price Rs. 3.

Pulse in Ayurveda.—By Ashutosh Roy, L.M.S. Published by Hakeem A. M. Abdus Salam, 12, Appu Mastry St., G. T. Madras. 1st Edition, 1925. Price Annas 12.

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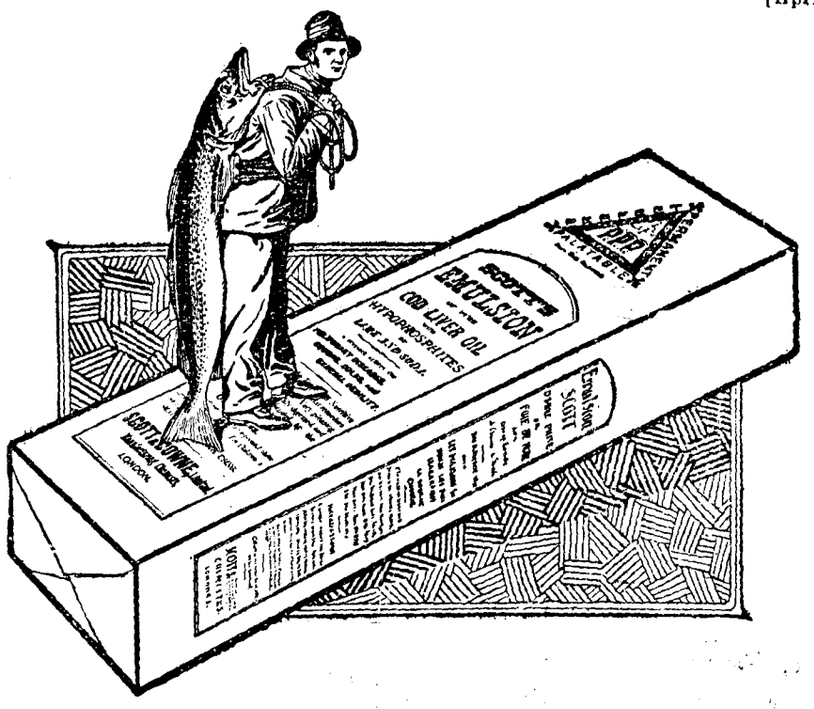

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ORIGINAL ARTICLES.

Clinical Lecture

ON

THE TECHNIQUE OF MODERN SURGERY AND HOW TO ATTAIN SUCCESS.

Delivered at the Bir Hospital,

BY SURESH CHANDRA DAS GUPTA, L.M.S., (CAL.)
SENIOR SURGEON, NEPAL.

LECTURE I.

Delivered on Feb. 15th, 1926.

GENTLEMEN,—

Much as you have seen in the surgical wards and operation theatres, much as you have heard from your professors, and also read in books and magazines, there are indeed only few things left, which I can tell you from my own experience as new. Happily you are born in the days of 'aseptic' surgery, and your predecessors and contemporaries have invented so many new things and worked out so many new processes in the field of surgery, that if you simply tread the marked path, you can reach the goal. I do not propose to discuss or to enter into every detail but shall mark out the way clear for you, as far as possible, and confine myself to a consideration of the broad points essential for the safety of the patient under operation. I shall deal with the subject under the headings, "Before operation", "operation", and "after-operation".

Anatomy, Surgical Anatomy, Surgery, Surgical Diagnosis, and Operative Surgery are all included in General Surgery; Anatomy is the foundation; Surgery is its structure; Diagnosis—windows; and Operative Surgery—the engineering and architectural portion. Surgery is like a

structure of unstable equlibrium on a sandy soil without anatomy. A would-be successful surgeon should lose no opportunity to perform dissection and other surgical operations on dead bodies either in the hospital mongue or dissection room. My renowned professor Sir Havelock Charles used to say that 'the position and relation of anatomical structures should be at your fingers' end.' At the same time I cannot but too strongly impress on you the importance of the correctness of your diagnosis; for, that is the *starting point*; and if you fail there, you fail wholly. For example, you excise a limb on the false assumption of sarcoma, or amputate a penis for warty growth or syphilitic gumma or ulcer on the supposition of cancer; your operation may be successful, but the result will be disastrous to the patient. Of course, there are exceptions: even exploratory incision or section is made to determine what the disease or injury is, and where situated, Sir Charles Ballance in his lecture on Surgery of Heart says "In an urgent case the surgeon must operate without being certain of the diagnosis. The operation is done to obviate impending death, and all else is secondary."

We want you to be both theoretical and practical; if you only know the art, you are a mere quack; while if you master only the theories, you cannot be a practical surgeon. In surgery a bit of engineering skill and workmanship is also necessary, and those that have them besides, are apt to shine. Always remember that real boldness and courage can only originate from deep knowledge of anatomy and surgery on the one hand, and practical experience on the other; and quickness can be aquired by boldness and practice *Perfection* in operation depends on five essential features; namely, complete asepsis; the least loss of blood; the least loss of time; the least disturbance of anatomical structures *i.e.*, *neatness*; and last of all, removal of the diseased part or parts if any, as *cleanly* and completely as possible;—and you must strive your best to attain it by regular study and unceasing practice.

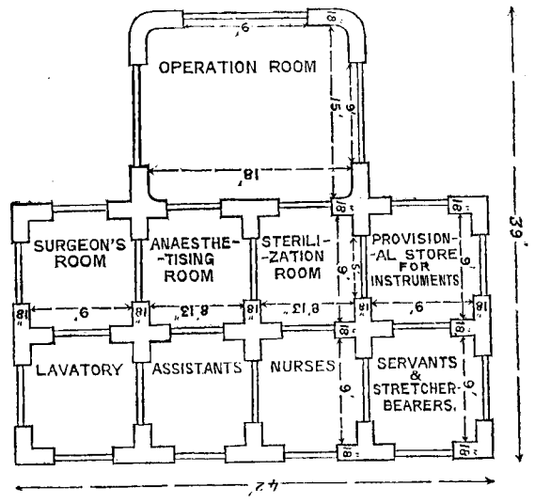
BEFORE OPERATION.

Now let us consider the different problems of practical surgery with which we are faced before operation, and try to solve them to ensure the success of our operations.

Operation Room.

The operation room should be above all neat, clean, well-ventilated and well-lighted. All the angles at the corner of walls, and their junction with floor and ceiling should be rounded off. The floor should be cemented and the walls glaze-tiled or painted with enamel. The ceiling must either be covered with uniform plaster or metal sheets. The room should be damp proof. There should be no cracks or crevices anywhere. It should

be open on three sides, and provided with big windows, which should be fitted with full-size glass panes. Sky-light is not very urgent; on the other hand, if it is defective, leaky, or full of dust, it becomes a source of danger. In a big hospital, besides the main operation room, there ought to be two rows of four rooms behind the theatre and connected to the main hospital building. The first row should be fitted up for the surgeon, anæsthist, sterilization, and provisional store for instruments; the second, for the assistants, nurses, servants and stretcher-bearers and lavatory. There should be no *sill* in the doors of operation rooms and wards. I give you a rough sketch of the position of the rooms:—



In every well-equipped hospital it is advisable that there should be two operation theatres; one for aseptic cases, and the other for septic; of which the ground-floor rooms should be utilized for septic purpose, and those of the first-floor for aseptic use. Then again, there should be separate instruments, trays, bowls, aprons, towels, gloves, etc. for septic and aseptic rooms; and the linen goods should be marked 'septic' or 'aseptic' according to use. If you do not possess separate rooms, then you must not operate on the two different classes of cases on the same day; and, if even that too is unavoidable, you should operate on aseptic cases first and then start with the others.

There should be nothing more or less in the room than what is just necessary for the equipment of the operation-theatre proper. Near about the centre, facing the light, the operation table should be placed; and the table should be aseptic, strong and steady, and fitted up with drainage system and adjustable arrangements in order to raise or lower the body according to necessity, or place it in any required angle or position. Two

aseptic tables for instruments, one for dressings; another and a small one for anæsthetist's requirements; two stands with bowls for lotions,—one for the surgeon and the other for his assistants; one douche-stand with glass douche complete; two foot stools with legs fitted with non-slipping rubber tips; one adjustable stool for the surgeon—these are all that is necessary. Every modern operation room should have electric connection and should be fitted up with a strong light, say 300—W which can be thrown on the field of operation without any interference to the work; and there should be also an electric radiator or heater for keeping the temperature of the room uniform between 70 to 75 degrees F. during operation. In the absence of electricity you must keep a strong head-light with reflector and a furnace connected with a chimney. In cold countries it is an absolute necessity. All the furniture should be aseptic, if possible glass-top, enamelled and movable on wheels. I would suggest also a pantostat with a complete set of electric operating instruments; these last being kept in an adjacent room and brought in only when required.

As soon as the operations of the day are finished, the tables, trays, instruments, soiled towels, etc., every article used in the operation should be thoroughly cleansed; all articles of furniture, also the floor and walls of the room should be brushed with washing soda, and then perchloride of mercury lotion (1 in 1000), or carbolic lotion (1 in 50), and then wiped dry. Lister believed that the chief danger of infection was from the air. Drs. Thomson and Miles state "It is now generally recognised that the risk of infection from the air of the operating theatre is practically negligible". Dr. Waring recommends employment of disinfection by the formalin method for the operation room on the previous day. The doors and windows should be kept closed and not opened until a few hours before operation, the next day. The less the room is frequented on the morning of operation the better. Dr. Dacosta says "Air carries but few micro-organisms unless it is filled with dust." So, the room should never be brushed on the morning before operation, as the dust particles which had settled might be stirred up. Jacobson writes "If the air is perfectly still, the dust and bacteria gravitate—when air is saturated with moisture, it is perfectly sterile."

SURGEON.

The surgeon should be a physically strong man with strong nerves. It is said of one surgeon that on the eve of a big operation he used to have several motions! Then he must be well-read, persevering and painstaking. "You must either cut by the *sharpness* of the weapon or by force of *weight*" says the Bengali proverb, which means in other words that success depends on intelligent as well as hard working. The late Sir Frederick Treves quoted Celsus to say that a surgeon should be

"young", which implies that the operator should be strong, courageous, and 'having sureness of hand and keenness of vision.' If his eyes are defective, he must wear proper glasses. He must be an early-riser. He should not grow a beard, but sacrifice it in the interest of his patients! He can, however, preserve the moustache, but must be otherwise clean-shaven during operation. He should be neat, tidy and also sober and good-tempered. Patients are usually peevish and impatient and in the habit of complaining for little things. The surgeon must not lose his temper at these manifestations of human irritability under suffering, but should always attend to the patient's comfort and listen to all his complaints sympathetically. He should inspire his patient's admiration for his *character* and confidence in his *ability*.

A shaky hand or a weak mind has no place in surgery. According to Treves "Precision of knowledge, precision of judgment, precision of hand are all needed in a surgical operation." A surgeon must thoroughly acquaint himself with the patient and his condition before operation and 'precisely' make up his mind as to what he is going to do, and the manner of doing it as well. He should also explain to his assistants beforehand not only the nature of the operation but also the particular process, so that they may study the subject and be of practical help to him and not mere *orderlies*. Alas, I have seen some busy (meaning "busy" in private practice) surgeons who knew nothing of the case or more probably, had not so much as seen the patient before he was brought on the operation table, when they started frantic enquiries about the nature of the complaints and gleaned all the information of the case from their assistants when the patient was already under chloroform! But the beauty of it is, that too often such unpardonable carelessness is usually committed by an idle man having no private work outside! In one instance, there was a case of hernia which the surgeon was told was a hydrocele. Another was a case of follicular ulceration of the rectum with intermittent bleeding and discharge, and the assistant arranged everything for piles operation. You can well imagine the flushed face and frowns of the surgeon. These are but common examples. So, give your assistant orders never to put up any case for operation without presenting the patient to you, and without your express sanction.

If you want to be a successful surgeon, you must be a master of the situation, just as the general of an army before an attack informs himself of his own as well as the enemy's state and position. You must inspect every detail of preparation, because the responsibility is yours. Since you like to assign the whole credit of success to yourself, how can you give the discredit of failure to others? Remember you have no *right* to play with any man's life. "In case of incompetent, untrained, or careless

assistants and nurses", writes Dr. Waring, "he (that is, the surgeon) must personally superintend or give explicit directions as to the method of carrying out correctly and competently all the technical details." Dr, Grant also says the same thing: "Hospital preparation must be carried out under direct supervision of *surgeon*."

He who wants to be a surgeon, must work in a hospital under a surgeon for several years; and he only who does the work of an assistant conscientiously, can in the long run, acquire all the qualifications required to become a surgeon. Strong *common sense* is an essential requisite for a successful surgeon. An aspiring surgeon must not remain contented in his *own* small sphere, and with his *one-sided* knowledge, but should go out and make a tour as far as possible in various parts of the country to learn his own defects and deficiencies, and at the same time to receive practical training from renowned surgeons of the world. Away with a lazy man! I tell you he has no chance of success. Always remember the Sanskrit aphorism, which means that the Lion of a man having courage and perseverance can only win the Goddess of Fortune.

Before any big operation you must read at least a few standard works on the subject and the various methods of operation recommended by them; then *pick* out the single one which is best suited to your capability. "You cannot be a surgeon" says the old Sanskrit proverb, "unless you have witnessed the death of a hundred men" which means the same thing as the English proverb, "Failures are but the pillars of success". The more you operate, the more you learn; learn not only how to operate, but also how to avoid pitfalls. Both the surgeon and his assistants should avoid, as far as possible, operation, dressing, or even examination of septic cases for 1 or 2 days, before a serious aseptic operation. It is also not good to examine or operate on aseptic cases with a septic wound on the hand. He can, however, attend to emergent cases, in the absence of a properly-qualified man, by wearing rubber gloves on sterilised hands. Never, if possible, accept any engagement of an arduous nature, or worry your mind on an unpleasant subject on the eve of a big operation. Do not be too proud of your capacity, because "pride goeth before a fall"; but be confident, for there is no harm in confidence of your own powers, if they really exist. Last of all, learn to take a *personal* interest in the welfare of the patient operated on by you as if he were a dear relation of your own; for then you are sure to do all that is required for him. "Heart within and God overhead."

ANÆSTHETIST, ASSISTANTS AND NURSES.

Your assistants, anæsthetist and nurses are the pillars on which your success and reputation rest. In a big hospital a surgeon's duty is over as soon as he sends the patient from the operation table to the wards. He has so many things to do, that he cannot possibly look to every detail himself, though in my opinion he should do so. An assistant on whom the surgeon can rely is a *boon* to him. He does everything for him; examines the patient's urine, stool, blood, and sputum; registers his pulse-rate, temperature and blood pressure correctly, taking care that these records are taken when the patient is calm and unagitated, not for example, taking his pulse or blood-pressure when the patient is actually on the table. He takes also full notes of the case, previous history and so on and finally presents the patient before the surgeon. And then, with his approval prepares the case for operation. An able assistant makes every arrangement for the operation and never lets the surgeon worry himself or exert his energy in carrying out the minuter detail just before an operation. And the surgeon finds no cause of annoyance over small things. As soon as the operation is over, he sees that the patient is properly and comfortably placed in bed, and then carefully attends to his after-treatment; he has to report in time to the surgeon, if he finds anything wrong with the patient which he cannot himself possibly manage—saving himself thereby from the responsibility in case anything untoward happens, as well as affording the surgeon a fair trial.

Many assistants are not necessary to a surgeon, rather the reverse. "Too many cooks spoil the broth." The surgeon should rather *practice* to operate with as few assistants as possible. If I remember aright, Dr H.J. Waring removed an uterine fibroid with only one assistant actually employed in helping him in the operation and even he was not allowed to touch the wound by hand. You are not going to hold posts in a first-rate hospital at once, so try to work with as few assistants as possible. In my earlier days I had only one compounder and one dresser—which number is usual with many beginners—and the compounder was my anæsthetist and the dresser my only assistant. I had only a few instruments and no sterilizer. I used to go to my hospital early morning, and with the help of the dresser boil everything including the nail-brush, towels, and aprons in separate vessels; and then having arranged everything in order and kept under cover, I would return to my quarters, take my meal and go again as a full-fledged surgeon! I did almost every sort of operation including amputations, excisions of joints goitre, trephine, stones, tumors, hernia, enterorrhaphy*, and so on with their help *only*. And I tell you these things only to give you a common example, and to say "What a man has done, a man can do." You must train your own men. The less you allow your assistant's hands impinge on the wound, the better chance you have to ensure asepsis. For an ordinary operation you require one anæsthetist, one assistant to help you in the operation, and one to remain in charge of instruments and dressings. That is

* Vide Indian Medical Gazette 1924, March.

all you can want. And in order to obtain success one particular assistant should be held *responsible* for sterilization and arrangements, who should also take special care not to place blunt cutting instruments, badly-fitted,

Operation Room, during Operation.

unworkable or useless apparatus, and rotten or friable ligatures and suturing material before a surgeon,—an usual cause for loss of time and energy, and embarrassment.

A word about the anæsthetist and nature of anæsthesia. Before operation you must settle what kind of anæsthesia you should adopt, taking into consideration patient's age, disease, and condition of health. Æther is bad for catarrhal condition of the lungs. In operation of goitre chloroform should be given very carefully. Use regional anæsthesia in minor operations *as far as possible*. I operated with the help of a *single* assistant no less than 300 hydroceles and some hernias with cocain or novocain ½ or 1 p. c. solution respectively (novocain being the better of the two); it is quite efficacious and harmless. Two to three c.c. is sufficient for one side.

Operation of fistula and piles under spinal anæsthesia is very convenient; I found Stovaine Billon (May and Baker Ltd.) best for the purpose. A C E mixture should be used for weak persons. Always guard against delayed chloroform poisoning. Now-a-days it is the custom to give morphine ¼ gr. and atropine 1/200 gr. half to three quarters of an hour

before the administration of chloroform. Its use is specially indicated in weak and nervous patients to lessen the shock.

The anæsthist must be a fully trained man and a practised hand. He must get ready everything for emergency, specially streilized syringes and ampules of strychnin 1/50, atropin 1/100, pituitrin 1 c.c. and adrenalin ½ c.c, and if ampules are not available, should keep the syringes charged. He should also keep by him gag, tongue-forceps, nasal tube, towel, and kidney-shaped tray. An electric battery and oxygen apparatus must also be kept in order. All tight fitting clothings, neck-ties, belts, etc., and also false teeth must be removed at the commencement of the anæsthesia. The anæsthist should not interest himself in the operation but *mind his own business*. Some surgeons urge that a screen be placed between themselves and the anæsthist, who should keep his *eyes* directed to patient's face to note the colour of skin and aperture of pupil; and also to the chest to observe respiratory movements; and the *ears* to the breath sounds. Then again, he should examine the pulse from time to time if required, to note the rhythm, volume, and also tension. He should not *disturb* the surgeon about petty matters, but if there is anything very serious he must give a timely warning. If the wound does not bleed as it should, or if the colour of blood is dark-red (which I noticed in some cases,) the surgeon should at once direct his attention to the anæsthesia.

Nurses are of great help in a hospital for the patients as well as surgeons and house surgeons. They must be always *up and doing*, not lazy, but eager to work. They should not think themselves to be mere *paid servants*, but look on their patients as their own relations; they should see that their patients get their food and prescribed medicines at proper times. They must look to the comforts of every one in their charge in such a manner that their very *presence be a source of joy* to them. Finally, they must report to the higher officers as soon as they find anything wrong with them, to remedy which is beyond their power.

CONDITIONS FOR OPERATION.

Such a veteran surgeon as the late Sir F. Treves wrote "No operation is without risk: some involve special risks; some overwhelming risks." I have seen and had enough bitter experience with the so-called simple cases. Sir James Paget also wrote "Never decide upon an operation, even of a trivial kind, without first examining the patient as to the risk of his life". Dr. Samuel Gant observes that, "The ideal operation combines minimum danger with maximum chance for recovery." Sir James Barr meant the same thing when he wrote in his Foreword to Abrams' Methods of Diagnosis and Treatment, "Surgeons may give recuperative powers of Nature a better chance by lopping off a diseased part of the

body, but many of them have yet to learn when the body will stand this lopping off." Two things you have to consider: one is the patient's capacity to stand the operation, and the security for his life; the other is your capability to perform it. You must rise step by step and improve your knowledge, gain experience, and also confidence in your own powers. It would be foolish on your part if you attempt cholecystotomy or removal of Gasserion ganglion, or of the tumours of pituitary body, or to make a surgical invasion of the mediastinum in order to resect cancer of the esophagus, without having experience in minor cases. Of course, you can perform an operation for the 'immediate purpose of saving life'; but for ordinary cases, even simple ones, you must weigh risks, as Treves advises, for life by operation on one hand, and by disease, if left unoperated, on the other. If you are not confident of success, or incapable of operating yourself, or want proper assistants, instruments and accessories, or arrangements for suitable nursing and the like, pray, do not operate, but send the case to a better or more well-equipped man, or let the poor man die in peace.

Most failures occur not from the surgeon's fault in operation, but because operation is performed on weak and unsuitable, or unprepared or badly-prepared cases. Do not, therefore, operate on any patient without thoroughly knowing the history of onset, heredity and constitution. Do not put up a case for operation as soon as he arrives. Let him have some rest, and accommodate himself to his new position and environments. You too can in the meantime study his habit, temperament, and idiosyncracies. Treves wrote that "It is not old age so much as senile degeneration that is to be feared by the operating surgeon". According to Jacobson, obesity is a bad condition for nearly all operations. "The thick layer of adipose tissue may impede the satisfactory exposure of deep parts"; besides, fatty layer is very liable to become infected. The same writer says "Advanced valvular disease is an absolute contra-indication to any but the most indispensable operations". Abdominal operations should not better be undertaken on a bronchitic patient without relieving his symptoms, as the after-cough will throw strain on the stitched parts. Operation on the upper respiratory passages or buccal cavity are hazardous as blood may be inhaled causing septic broncho-pneumonia. To combat with, position of the patient and arrangement for swabbing or either preliminary tracheotomy or intratracheal anæsthesia with either are required. In operation of mouth specially with septic conditions or presence of carious teeth, some mouth-wash must be given as a routine practice. It is not good to operate on a woman during menstruation, pregnancy, or lactation; a baby during its first dentition; or any one in a debilitated condition or profound anæmia, unless operation is unavoidable. Never operate on any one immediately after a shock. I lost two cases after amputation just after the receipt of injury

from an explosion in one case, and effects of tearing off of the soft parts and smashing of bones in a machinery in the other. Later on, I did not amputate immediately, but gave saline injection if the patient was bloodless, stimulants if weak, and morphia if restless; and only secured the bleeding points and ordered for antiseptic dressings, and kept him *warm*. The result being that the patient generally did well. Treves says that children bear shock badly, hæmorrhage well. I have seen children bear chloroform very well too. I operated on a baby 5 days old with imperforated anus passing stool through the bladder with urine; I kept him under chloroform for nearly half-an-hour to perform colotomy, having failed by all other means; and he was all right. Habitual and even occasional drunkards are bad cases according to Treves, so he advises them to be kept under total abstinence for a week or two before operation. In the opinion of Da Costa we should avoid a patient with a hæmoglobin percentage of under 50. Treves says, "Tuberculous patients stand operation remarkably well", and of these, children specially. You must beware of hemophilia, mainly in males. You should test the blood of suspicious cases; if it does not coagulate between 3 to 5 minutes, take precautions. Calcium lactate should be given in 15to 20grs. doses for three days previous to operation; normal horse serum, coagulen ciba or hemoplastin (P.D.) are worth a trial; sometimes thyroid or thymus gland is useful. Paget urges that operation should be avoided in rapidly-progressing consumption. Leucocythæmia, very low or very high blood-pressure is a bad condition. You must not operate on a patient in any acute disease or on a syphilitic case in the eruptive stage. Diabetes with a large quantity of sugar, especially acetone and diacetic acid should be avoided. Acidosis must be corrected by large doses of soda bicarb, and addition of carbo-hydrates to the diet before operation. Major Green-Armytage always gives this mixture as an antidote to patients undergoing operation under chloroform.

℞—Soda bicarb.....1 dram.
Pot citras.....½ "
Mag. carb and
calci carb.....each 3 grains.
Syr zinger.....½ dram.
Aqua ad One ounce.

One dose every 4 hours, diluted with equal parts of water.

Never operate on *too* advanced or deep-seated growths, especially tuberculous or malignant ones of head, neck and trunk in the neighbourhood of important vessels, nerves, or viscera, such as the anterior part of neck, axilla, scarpa's triangle, spine, mediastinum and so on with extensive adhesion, glandular enlargement, extreme emaciation and profuse suppuration. They are nearly all

inoperable cases. Senn observed long ago that "Early operative interference is as necessary in the treatment of tubercular adenitis as in the treatment of malignant tumours," and held that "the prognosis is very grave if the patient is anæmic and the glands on both sides of the neck are affected at the same time." You know, only the other day I refused to operate on two cases who came to me for admission; one was a case of sarcoma involving both the triangles of neck in a boy aged 8 years; another was a cancer of penis in which the penis was totally lost; scrotum, and the skin of pubis were eaten away; and inguinal glands and testes had sloughed. Also do not operate on cachectic patients who have lost *all vitality*; the operation may be successful, but the wound will never heal in life-time. The operation of piles are contra-indicated in the presence of a suppurating fistula.

According to Treves "an operation on the subject of Bright's *disease* or of surgical kidney, is a grave matter." Never remove a kidney unless you find the excretory function of the other kidney satisfactory. In case of acute obstruction or any septic absorption "operative treatment should be undertaken at the earliest possible moment to prevent the patient from absorbing a *fatal dose of toxins*", (Choyce's Surgery); the sooner it is done, the better is the chance for life. In case of debilitated patients, try to improve their health by proper treatment and liberal diet before putting them up for operation. Amongst others preliminary preparation according to Dr. Gant consists in prescribing supportive measures, forced diet, suitable medication and "encouraging the sufferer by *manner and words*." Remember always that operation is not your *end*, but *means to an end*; your sole object is to make the patient live in a better health and more comfortable well-being Of course, you can operate only "when operation is demanded by imperative necessity." Do not, at the same time, keep a patient *waiting* for a long time in suspense in the hospital for nothing or for personal convenience. *Selection of suitable cases is the secret of success.*

PREPARATION OF PATIENT.

It is a routine practice to give a purgative overnight, followed by a soap enema before operation. I have learnt by experience that this is not quite essential. Of course, if there is constipation it should be relieved by a mild purgative. Da Costa says, "constipation lessens vital resistance and increases the liability to wound infection" and that "retention of fermented matter causes catarrhal inflammation and bacteria escapes more easily". Violent purgative should never be given. Purgatives given at night usually disturb sleep and repeated motions also exhaust the patient; so I have abandoned the practice. I now give a small dose of castor oil 2 hours after the morning meal, to be followed by a soap-and water enema 4 hours afterwards. On the previous evening I usually give very light diet

for ordinary cases. In case of operation on the rectum it is better not to give any douche on the morning of operation, or at least 6 hours before operation as the patient acquires a tendency to repeated motions. Dr. Gant advises that solid food should be prohibited on the day preceding operation; and "bowels irrigated twice with a 5 per cent. icthyol solution, following which intestinal peristalsis is arrested by an opiate." He also urges that "unless the bowel is thoroughly cleansed of discharge, fæces and scybala above and below the growth, serious post-operative complications are likely to follow." Dr. Lockhart-Mummery prescribes this mixture on the night before operation:—

R/—

Tinct. of opium 10 minims.
Spirit of chloroform 15 minims.
Liq. ammon acet. 30 minims.
Tinct. catechu ½ dram.
Tinct. Cardamom Co. 1 dram.
Aqua cinnamon 1 fl. oz.

I always give, if the condition permits, a warm bath on the day previous to operation, after the bowels are moved. For ordinary cases the field of operation should be shaved and thoroughly scrubbed with Potash soap and warm water on the previous day; then it should be rubbed with spirit of turpentine, ether, Spt. Bin Iodide; and last of all, the part should be painted with 2 % iodine in 75 per cent. rectified spirit and then covered with sterilised dressings. It is very difficult to properly purify axilla, groin, peritoneum, and especially parts covered with hair, or having cracks and crevices or grooves; and *regular* cleansing with antiseptic soap for several days is required. When the skin within the area of operation is a seat of ulcer, sinus or septic infection, the infected part must be thoroughly sterilized by application of strong carbolic acid or actual cautery before the performance of an aseptic operation. Tinct. Iodine must be prepared with rectified spirit, and one with methylated spirit is very irritating to eyes. If the skin is once painted with iodine, better not cover the part at once with dressings before it is dry; or apply strong perchloride lotion over it. Always protect the peritoneum from contact with iodine, as iodine causes irritation. You know, that application of iodine is useless on *moist* skin; therefore, skin must be dried, and *dehydrated* first. Jacobson recommends 1 per cent. solution of piric acid in alcohol which has a greater *penetrating* power and is cheaper than iodine. In an urgent case no soap should be used; "dry shave" with a sharp dry razor, scrubbing the part with æther Spt. Bin Iodide (1 in 500), and painting of tincture iodine (5 p. c.) just before operation serve the purpose. In aparotomies and other serious operations, where strictest aseptic

precautions are necessary, I would recommend additional sterilization of patient's clothes, bed-sheets and covers, for which some extra kettles are only necessary. Then the patient's bed must not be too broad, or placed at the corner or against a wall, so that he may be approached from all sides. The beddings should not be very thick for ordinary purposes, but in the case of patients who have to remain long in bed, I have always heard complaints about the bed being too hard for such an additional mattress should be supplied. Above all, the patient should be warmly clad and should be made to put on socks reaching upto the knee. You must secure for him undisturbed rest and sound sleep for the whole night, and keep him in the *best of spirits*.

TIME FOR OPERATION.

Morning is the best time for operation, and the earlier the better, because, if hæmorrhage or any other serious complication occurs it occurs in day-time and help is available. I usually give patient a cup of weak tea or milk and sugar or soda if for any reason, the operation is to be delayed. It must be given at least four hours before operation. If done with cocaine, I give light diet or half ordinary meal in the morning.

INSTRUMENTS AND DRESSINGS.

Simple instruments are the best. Use complicated instruments as little as possible; and do not use any with which you are not fully acquainted. Special instruments should be used only in special operations; but the less they are used, the better. Sir Havelock Charles used to tell us "give me knife and forceps, and I shall perform any operation" and in his time we used to see very few instruments indeed. Now they have grown to ten-fold their number. Of course, they are some very useful instruments, like tissue-forceps, towel-clips, peritoneal-forceps, needle-holders, Reverdin's needle, toothed dissecting-forceps, intestinal clamps, scissors curved or angled on the flat, retractors of various kinds, and so on. The instruments should be thoroughly boiled in 1 % solution of carbonate of soda for 15 minutes and placed on sterilized trays only just before operation. It is better not to exhibit the instruments before patient until he is 'under'. Cutting instruments, specially knives, scissors, and needles need not be boiled, as boiling blunts them. They should be kept in pure lysol or cresol for 20 to 30 minutes and then washed with purified hands in meth spt. (75%) and then immersed in boiling water on the tray. They can also be sterilized by soaking in spirit solution of acid carbolic (1 in 20) for the same period. Never place a sterilized tray, bowl, jug or kettle on the floor, or even on any unclean table.

As far as possible instruments and dressings etc., should not be touched even with purified hands, but either 'tipped into sterilized dish from the perforated tray', or removed with a pair of boiled forceps, or instrument

lifter. Some surgeons do not like even threading the needles with the hand—they too being threaded by means of forceps.

Some surgeons prefer the instruments dipped in sterilized water; some like dry; I always have them spread on a sterilized towel upon a sterilized tray. Placing them in water yeilds no advantage. All sorts of instruments should not be *huddled* together; it makes the "confusion worse confounded"; roughly-speaking I keep cutting instruments, dissecting forceps, dissector, probe, etc. in one; artery forceps, and any special instruments in another; and in a third needle-holder, needles, ligature, suturing material, and so on. Always ask your assistant to keep a stove burning in a side room until the operation is finished, so that if you want an extra instrument for emergency purposes, you can have it at a moment's notice. If you have several operations for the same day, always have your instruments *fully boiled* for each case. Do not mind if you have to *wait*.

Dressings include swabs, sponges, pads, cotton, wool, lint, silver-leaf, bandages, and so on. Marine sponges are untrustworthy. Swabs are prepared in such a way that they can remove blood or any other discharge from the wound by soaking. They are made either of gauze only or absorbent cotton wrapped in gauze. Ready-made sewn gauze-sponges, though good stuff, should not be kept for continual use, it being better to use fresh ones for each case. They should be made in such a manner that their cut margins be turned in and carefully folded so that their fibres may not fall into the wound. Abdominal sponges should have each a tape attached to one of its corner. These should be sterilized in an autoclave (sterilizer) and "subjected for half-an-hour to a temperature of about 240 degrees F., under a pressure of from 10 to 20 lbs. of steam to the square inch"; then, by withdrawal of steam, they are dried by heat. (Thomson and Miles.) It is very sage besides being dry. In the absence of a sterilizer, you must boil the dressings for at least 15 minutes before use; *mere* raising the temperature to the boiling point is not sufficient.

Regarding silk and catgut ligatures, simple boiling is not always safe. So silk ligatures, horse-hair, silk-worm gut, drainage tubes, etc. should be soaked in ether for 24 hours, and in alcohol, another 24 hours. Next day they are bolied in corrosive sublimate (1 in 1000) solution and finally kept in alcohol. (Kocker.) At the time of use they should be boiled again. Catgut cannot be boiled or even kept in water, as it becomes quite useless. It is similarly soaked in ether and alcohol for 24 hours in each and then wound on glass spools with purified hands protected by sterilized gloves and then placed in a screw-top metal jar; the jar if half-filled with alcohol and then boiled for half-an-hour by immersing in hot water. (Thomson and Miles.) It is used directly from the jar, or kept immersed in alcohol or Spt. Meth. in a small tray, or kept wrapped up in a dry sterilized

towel. Sir Berkely Moynihan says that catgut can be effectually sterilized by immersion in iodine solution prepared by mixing Tinct. Iodin (off.) 1 part alcohol (45 per cent.) 15 parts for 8 days. According to Binnie "When silk is to be used for intestine works, it may be sterilized by steam; .....if to be sterilized by boiling, the requisite number of needles should be threaded beforehand and stitched to a towel in such a manner that they can be easily pulled out, but cannot become entangled while being boiled. "I follow the latter method for all aseptic operations. Besides its being a clean method, the surgeon has *not to wait* in the course of operation for threading the needles. I also have the required number of sterilized catgut stiches ready with needles in alcohol before operation.

Operation room during operation.

All these sterilizations should be carried out in a separate side-room; where, besides a high-pressure steam sterlizer and an instrument sterilizer there should be an additional copper boiler for preparing sterilized water, and a simple sterilizer for boiling bowls, trays, dishes, douche-can, kettles, jugs, etc. In extreme urgency you may sterilize bowls and trays by putting in them a little methylated spirit and setting fire to it and then *directing* the flame to all their sides. One kettle containing sterilized gowns, face mask and gloves should be despatched to the surgeon's room; in another, similar articles should be taken to the assistants' room; and those for the operation proper should be kept apart, and transferred to the operation theatre *just before* operation. Rubber shoes should be washed in sublimate solution (1 in 1000) and kept dried in their respective places. Talking and smoking should be strictly forbidden, and no one connected with the operation, or any visitors should be allowed in without sterilized gowns, masks, gloves, and shoes.

The cavity of the mouth invariably contains bacteria: Steptococci are always found in saliva and though expired air in ordinary breathing is free from organisms, the nose may be the seat of infection. A surgeon should not operate, if possible, during acute catarrhal condition of nose, throat, or respiratory passages. The face mask or cap should cover the hair, opening of the mouth and nose, and must fit fairly tight. Its use is uncomfortable to a beginner, but by practice the inconvenience is overcome soon. Spectacles if used, should be wiped with alcohol.

Cleansing of hands is very important. First of all the nails must be spared short; Thomson and Miles advise that they should be "cut down till there is no sulcus between the nail edge and the pulp of the finger." Then the hands should be thoroughly scrubbed from nail to elbow with a sterilized nail-brush for *at least* 5 *minutes* in order to remove "gross surface dirt and loose epithelium" by soap in *a stream of running water* as hot as can be borne. Next the hands should be dipped in lysol solution *upto the eblow*; then the skin is 'dehydrated' by rubbing it with a gauze soaked in spirit; after that Spt. Bin Iodide is used, then the hands are wiped dry with sterilized gauze and gloves worn. Rubber gloves are the best as they are impervious; they are used for the safety of both the surgeon and the patients. The cuff of the gloves should be turned up over the sleeves of the apron. Some use lysol lotion and others sterilized French chalk to facilitate the introduction of the hands into the gloves. If lotion is used, the fingers soon become shrivelled in contact with the liquid; dry powder is much more comfortable. Always keep an extra quantity of sterilized gloves in stock. Not only gloves, but in all big and well-equipped hospitals one or two kettles of sterilized dressings including mask, draw-sheets, towels, etc. must be kept ready for *emergency*. Care should be taken that purified hands, field of operation, sterilized dress or dressings do not come into contact with anything that is not sterilized. The edge or outer surface of kettles, trays, jugs and other receptacles also should not be touched. You cannot be too *orthodox* in this matter. It is good to change gown and mask at the slightest *suspicion* and also after each operation, if possible; as for gloves, they must be changed. I do not use soap cakes because they cannot always be obtained fresh or unused. Mercuric Iodide (1%) soap in collapsible tubes ethereal antiseptic soap (P.D), or liquid synol soap, are the best. I use sterilized water or normal saline in *aseptic* operation and do not use any strong lotion for aseptic purposes except for cleaning hands; for which, I use Lotio Bin Iodide (1 in 3000) or Lysol solution (dram to pint.) In Guy's Hospital water which is used in operation is filtered through Berkefeld filters. I always keep *cold* sterilised water in boiled kettles or jugs (covered up by their own covers or sterilized towels) for *mixing* with lotions if they are too hot. Nail brushes must be sterilized in a 1 per cent. solution carbonate of soda and kept in Bin Iodide lotion (1 in 500); separate ones should be kept for the surgeon and his assistants, as well as for septic and aseptic use. Saline apparatus and sterilized normal saline must always be kept ready for emergency, especially in the case of weak patients and for those cases where much loss of blood is apprehended. Hot water bottles should also be ordered beforehand, if there is any sign of collapse.

* "ORTHOPÆDIC TREATMENT IN THE ROUTINE SURGICAL PRACTICE OF A GENERAL PRACTITIONER"

By

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I am thankful to the Association for the opportunity offered to speak to you on this occasion: I am very much indebted to the President Col. E. W. C. Bradfield, M.S., F.R.C.S., O.B.E., I.M.S., for his kindness in presiding on this occasion. His great interest in orthopædic work is known to you all.

"The true criterion for measuring the standard of surgery in any country, is not the success in the application of operative treatment, but the success which has been attained in its prevention."

In this paper a wide significance is attached to the word deformity which is implied to indicate any deficiency in the function of an affected part after an injury or disease.

A. There are a few congenital conditions which must be recognised and taken on hand from the very day of the birth of the child. Fracture of the humerus, femur, paralysis of the arm, rupture of the sterno-mastoid muscle, depressed fracture of the skull, must be identified soon after the birth of the baby. The midwife, the nurse in attendance, the health visitor, and the medical attendant must co-operate.

The next congenital condition, talipes-equino-varus constitutes 75 per cent. of congenital deformities of the foot. It is perhaps difficult to diagnose the condition at first sight in a new-born baby. When the foot is persistently held in an adducted position at the mid-tarsal joint, it is a case of talipes-equino-varus. The principle underlying the treatment is daily manipulation of the foot, so as to correct three factors which constitute the deformity. The anterior half of the foot should be pressed outwards until the inner side of the foot is straight; the foot as a whole rotated outwards until the sole looks directly downwards; then the front should be pressed upwards, so that it is at right angles to the leg. With practice, these manipulations can be carried in one movement. Great care must be taken not to strain the ligaments of the knee and ankle, the knee being bent to a right angle and held with one hand, the lower third of the leg should be gripped with one hand, while the manipulation is performed with the other hand. A good plan is to teach the mother or any intelligent member of the family to carry out the manipulations twice a day for ten minutes.

* A lecture delivered before the All-India Licentiate Medical Practitioners' Association, Provincial Conference at Madras 23rd January 1926.

The mother must be instructed to show the child to the doctor once a week. When the foot has become so soft, that the deformity can be easily over-corrected, the foot should be retained in that position without much tension, and a strapping must be applied so as to maintain the over-corrected position, or a special shoe should be applied. When the child begins to walk, the outer edge of the sole and the heel of its boot should be raised by ¼ inch. The all-important point is, that the treatment should be started at once before the child is a week old.

CONGENITAL DISLOCATION OF THE HIP.

This is rarely diagnosed before the child begins to walk, although the mother may notice, that the hip is more prominent on one side in unilateral cases, or in bilateral cases, that the lumbar region is curved forwards and that the baby is broader than normal across the hips. Most surgeons prefer to wait until the patient is at least two years old before the dislocation is reduced. After reduction the child is put in plaster of Paris, and can be treated in the patient's home, and be periodically seen by the doctor. The mother must be instructed to keep the plaster and the clothing under it as dry as possible.

With regard to congenital deformities, never tell the parents that nothing can be done, or that the infant "will grow out of it." Every case must be systematically examined and the deformities corrected.

B. ACQUIRED DEFORMITIES.

I have classified acquired deformities as (1) due to injury.

(2) due to disease.

The classification is that which I would adopt clinically, so that the practitioner can realise, how loss of function results from common injuries and diseases.

(1) INJURY.

(*a*) Injury to all the structures leading to amputations or severe infection of the wound, with adherent scars, large cicatrices adherent tendons, wasting of muscles, ankylosed joints, etc.

(*b*) Injury to bone, leading to various fractures.

(*c*) Injury to a joint, leading to a dislocation, sprain and rupture of ligaments and muscles. Injury to hip-joint, leading to Coxa Vara.

(*d*) Displaced cartilages in the joint.

(*e*) Rupture or wound of a muscle or tendon.

(*f*) Contusion, compression and rupture of a nerve.

(*g*) Wounds of skin and subcutaneous tissues.

(*h*) Fracture dislocation of spine.

(*i*) Careless plaster of Paris applications, light splinting and bandaging leading to Ischæmic contracture.

(*j*) Injections, intramuscular, given over the deltoid region and middle of arm.

(*k*) Injuries to the skull as depressed fracture leading to paralytic conditions.

(*l*) Chronic irritation leading to Dupyteron's contracture, and continued application of ill-fitting shoes.

(2) DISEASE.

(*a*) Rickets leading to Genu Valgum and Genu Varum. Fractures, especially the green stick variety.

(*b*) Osteo-malacia.

(*c*) Diseases of bone with chronic sinuses leading to wasting of muscles, ankylosed joint, diseases of joint which, during the inflammatory and suppurative stages, have been kept in a bad position leading to contracted and ankylosed joints and pathological dislocations.

(*d*) Static deformities leading to curvature of the spine and flat foot.

(*e*) Diseases of muscle arising from acute anterior polyomyelitis, infectious diseases such as diphtheria, poisonings such as lead and mercury, other paralytic conditions of the upper motor neuron and torticollis.

(*f*) Diseases of the tendon as suppurative teno-synovitis leading to stiff fingers.

The general practitioner must realise, that recovery of function takes different periods of time, according to the amount of co-operation which the patient is willing to give during the course of the treatment. The surgeon can only help the power of living tissue to conquer disease and restore function. A patient waiting wearily for movement to return, to a stiffened joint or a limp limb, is not to think, that the means of recovery lie in the surgeon's hand and expect a cure to be worked on him by means which are both active and speedy. Hunter cured stiff-joints by movements and he preferred active to passive movement. A voluntary muscle is the most educable of all structures. By repeated and judicious exercise of his will, a patient may do more to help the recovery of muscular function, than that can be accomplished by the most complicated of gymnastic machines and electric batteries.

(*a*) INJURY TO ALL STRUCTURES LEADING TO AMPUTATION.

Taking the acquired deformities seriatim:—It has become possible by Immediate cleaning of the surrounding parts and the wound under an anæsthetic, unless contra-indicated, with excision of lacerated edges and adoption of Carrel Dakin's treatment to prevent sepsis, primary amputations have become very rare. During the treatment of a wound, think of the limb below and keep up the action of the muscles. Skin-grafting will avoid large cicatrices. If an amputation becomes inevitable, it must be done with an eye, to the further utility of the limb. These are indicated in all text-books.

(*b*) INJURY TO BONE LEADING TO VARIOUS FRACTURES.

Except in Madras City, this forms one of the commonest surgical practices of all general practitioners. I would remind the practitioner that a distinguished professor defined bone-marrow as made up of "treachery." The deformity which is left behind is permanent, and these patients live very long to tell the tale of the inefficiency of the medical attendant. Recent text-books give elaborate directions in treating these types of injuries. Many modern appliances have been brought into use in big hospitals which are not available to the general practitioner. The day of operative treatment invented by Sir Arbuthnot Lane is tending to pass off. The operative treatment is now solely limited to fractures of the patella and olecranon. The after-treatment, after what is proverbially called "setting" up of a fracture requires careful personal attention of the doctor. I would recommend the use and application of a few Hughowen Thomas's appliances and principles more commonly. Every fracture should be looked upon as a potential deformity, The least obvious prove the most disabling. Function is impaired, not because of the presence of an ugly lump, but strain is cast upon joints above or below the fracture. The ill-effects following fractures are often due to injury to the soft parts, as may be instanced by Ischæmic palsy and injury to the nerves. An end to-end opposition with imperfect deflection of body weight is infinitely more serious, than a slight overlapping where body weight falls in correct line. The smooth working of a limb, depends upon preserving the true axis of movement of a joint, so that the stress of muscular action may act across the joint in normal lines. Otherwise abnormal stress will produce abnormal strain, for we are dealing with living bone in accordance with Wolff's law which is the physiological equivalent of the universal law that strain is proportional to stress. In dealing with fractures of the shafts of long bones, the first consideration is to secure a true anatomical alignment of the bone, so that axis of movement of the joints at the two ends of the bone may retain its correct relative positions. Many deformities are due to want of recognition of this fact. Thomas, over thirty years ago, was unhappy if he had more than ½ inch shortening in any case. To cheer up the practitioner, I may

mention that he used to send the fractured femur cases, even immediately after the setting to the patient's home in a four-wheeled carriage.

The following is a short summary of the important points to be attended to under each individual fracture:—

FRACTURE NECK OF FEMUR.

(1) Abduction. (2) Inward rotation under extension would secure in the limb, a range of movement which would more evenly distribute the pressure of the head in the acetabulum, while later a weight-bearing splint would prevent shortening.

UPPER THIRD AND SHAFT OF FEMUR.

Angulation common. Body weight is so deflected to strain both the hip and knee-joints. A femur in good alignment while recumbent, would almost become surely crooked if walked upon without weight-bearing protection.

FRACTURE LOWER THIRD OF FEMUR.

Sagging at the site of fracture must be prevented. Otherwise it results in a genu-recurvatum. It can be prevented by a sling underneath, when a Thomas's splint is used.

KNOCK KNEE FOLLOWING A FRACTURE OF THE LOWER THIRD OF TIBIA.

This is generally due to the common practice of setting a fracture of tibia as if it were a straight bone. Place a pad on the inner side of the ankle in such a way as to obliterate the normal curve.

POTT'S FRACTURE.

The practitioner may be reminded, that in addition to a fracture, there is laceration of a ligament as well as a dislocation of the foot backwards with eversion. It is important that every one must remember during the reduction of this fracture, that the knee should be fully flexed, the heel pulled forwards, and the lower end of the tibia should be simultaneously pushed backwards. The foot should be fixed in inversion. Even if the bones are restored to their normal relationship eversion will recur later during standing and walking. Therefore, in the after-treatment of these cases, the boot should be crooked by placing a triangular pad ½ inch thick on the inner side of the heel, so as to deflect the body weight to the outer side of the tarsus. If this is not done, I have seen that most of these men are not able to do their ordinary work with efficiency. The efficiency of even an ordinary house-hold servant who has sustained a fracture of this type, is very much diminished.

FRACTURE IN THE REGION OF THE SHOULDER.

All fractures in this region must be treated in a position of slight abduction. Various devices can be made locally to fit each patient by the doctor himself, varying from an axillary pad, well-padded and stitched, a card-board Middledorf's triangle or a wooden Middledorf's splint. Every attempt must be made to prevent wasting of the deltoid muscle by early massage.

FRACTURE OF THE SHAFT OF THE HUMERUS.

As soon as a patient is seen with this type of injury, ascertain if the musculo-spiral nerve is paralysed or not, by asking the patient to extend the wrist. If the nerve is paralysed, the case requires a consultation with a specialist. If there is no paralysis, the case is to be treated by an internal angular splint and three side-splints. The wrist-joint also must be flexed for at least a week. Mal-union is common at this site. I have seen two cases of this type, not treated by us. Many splints have been devised for fractures in this region. Whatever may be their necessity during the war, the treatment above-mentioned is enough for the majority of cases, and if the sling is applied to support the forearm only without including the elbow, majority of the cases do well.

FRACTURES IN THE REGION OF THE ELBOW.

To be frank, the supra-condylar fracture, an injury which is very commonly met with in children, is not satisfactorily dealt with. Majority of the practitioners know and do put up these cases in acute flexion. What I am emphasising to-day is that it is not enough to take hold of the forearm and merely to flex it. The forearm must first of all be supinated, then extended and pulled, while the upper end of the fracture is pushed back, the forearm is pulled forward and flexed. During the acute flexion, the affected palm, is in a position of grasping the patient's neck. This position must not be put up if there is the least swelling about the elbow. No passive movements must be attempted for a week, only gentle massage being permitted. If reduction of the fracture is incomplete as most often happens, there is extra callus thrown arround the elbow, resulting in a destruction of the carrying angle of the forearm, and inability to perform the elbow movements completely. Such a case can be dealt with only at about the age of twenty by doing a major operation of excision of the elbow-joint.

FRACTURES OF THE FOREARM.

These are treated in large numbers by practitioners and in hospitals in the out-patients. Great care must be bestowed on the selection of splints slightly broader than the forearm of the patients, properly padded, and put up midway between pronation and supination. In fractures above the insertion of the Pronator Radii Teres muscle, it is important to fix the elbow-joint by a rectangular splint. The non-application of a good sling leads to many deformities in the forearm. A narrow bandage, must not,

on any account, be used. The sling must support the elbow as well as the wrist and hand.

Many text-books advise the application of plaster of Paris to fractures. Unless for any special reason, I would advise that plaster of Paris must not be used as a routine. It is a common cause of non-union, of pressure sores, pressure sloughs, and wasting of muscles. Volkman's Ischæmic contracture of the forearm muscles results from tight splinting and bandaging of the forearm, and putting up the elbow in acute flexion when there is œdema still present. This is an avoidable condition and must be prevented. I have seen cases occurring from the neglect of the above precautions. It is a disputable point, if contracture of the forearm muscles can occur without tight splinting. I have seen a case where splints were not at all tight. It was a case of compound fracture of the Ulna. The case was recognised early and the treatment *viz.*, relaxing the antagonistic group of muscles by extending the wrist either by a special splint, or by a big cork opposite the palm, or by a big cotton pad.

COLLES FRACTURE.

This is a common fracture and during its treatment, the attempt of the doctor must be to see if he has undone the impaction that is so common here, otherwise a deformity is the result. The deformity does interfere with the wage-earning capacity of the individual ultimately. The immediate disability also lasts much longer, nearly four months. The multiplicity of splints that are devised for the treatment of this fracture is a further proof that it is not treated properly. Dis-impaction by Jone's method, by placing the thenar eminence one over the upper fragment and one over the lower fragment, and applying pressure in opposite directions under an anæsthetic is useful. A piece of leather strapping applied around, after reduction, followed by active movements from the third day onwards will do.

Sufficient has been said about, to indicate that the doctor must look after his fracture case himself, by ensuring absolute rest from body weight until the normal period of *completion of consolidation*, takes place. If union is delayed, the surgeon should be patient. A disunited fracture cannot be cured merely by an operation. All that the operation can do is to reconstruct the fracture, and a satisfactory result can occur only by the maintenance of alignment until the consolidation of the bone is complete.

(C) INJURY TO JOINTS.

It is needless to add, that an unreduced dislocation is a severe handicap to the patient. Many a dislocation of the meta carpo-phalangeal, meta tarso-phalangeal and inter-phalangeal joints, is missed. They do

interfere with the efficiency of all types of workmen. The contemptuous sprain of a joint requires complete rest, till all tenderness over the region of the torn ligament has passed off and the after-treatment is to deflect the body weight, on the side opposite to the torn ligament. This is more so in the region of the knee and ankle.

(D) DISPLACED CARTILAGES IN THE JOINT.

The condition of displaced semi-lunar cartilage or inter-locking of the knee-joint, is such a deformity as to disable horses etc. This would impress the practitioner to advise his patients with a ruptured or displaced semi-lunar cartilage, to wear an apparatus to the knee or to have the cartilage removed by an operation.

(E) RUPTURE, WOUND OF A MUSCLE OR TENDON.

In all open wounds, as soon as the wound is fit for repair, an end-to-end union of these structures must be done.

(F) INJURY TO A MOTOR OR MIXED NERVE

This concerns us most. It is followed by various grades of paralysis. In ordinary routine work of a hospital or general practice, certain types of these injuries can be prevented. One such common type of injury is the extreme abducted position of the shoulder during general anæsthesia leading to circumflex nerve paralysis, or an ordinary abducted position of the arm, resting at its middle near the musculo-spiral groove, against the edge of the table leading to musculo-spiral paralysis. This can certainly be prevented. Other types of such injuries are crutch paralysis, and brachial birth paralysis. Avoid *intra-muscular* injections in the region of the deltoid and the arm, the proper site for an intra-muscular injection being 2 inches below the highest point of the Iliac crest in the gluteal region.

If the muscles are paralysed in the case of a nerve injury, the first thing to do, is to keep the paralysed muscles in a position of relaxation, to prevent contractures of the paralysed muscles. If the nerve is ruptured, it requires an operation of uniting the cut-ends. It is better to leave this operation to a specialist. Till that is done, and for a long time after that is done, if the practitioner is in charge of the after-treatment of the case, the paralysed muscles must be kept relaxed. There is no place for electricity in the treatment of a paralysed muscle; its proper position is to diagnose the paralysed muscle. Keeping the muscles warm is also useful.

(G) WOUNDS OF SKIN AND SUBCUTANEOUS TISSUES.

Burns, Scald.—As far as possible large scars must be avoided by skin-graftings, which operation can be done under local anæsthesia by injecting 2 per cent. novocaine around the external cutaneous nerve, 1 inch below the anterior superior spine of the Ileum. Grafts can be taken from the

lateral aspects of the thighs. The area to be grafted on must be free from sepsis. The granulation tissue must be healthy, and there must not be excessive bleeding or discharge. Large grafts taken with an ordinary good razor, applied evenly, with a firm bandage after the dressings are applied, are minor details to be remembered. During the treatment of these accidents and injuries, the surgeon must think of the utility of the limb and keep the particular joints in the most useful position. It is common to find an adducted shoulder, a contracted elbow, flexed fingers, adducted hip with contracture of the labia in girls, a flexed knee, and a talipes equinus, all of which are avoidable deformities by using a common-sense home-made appliance by a local carpenter and keeping the joint in the most useful position.

(H) INJURIES OF THE SPINE.

In my experience the ordinary non-operative treatment of this unsatisfactory type of injury leaves behind some deformity which varies in degree. Patients may not be able to resume their previous occupation.

(I) INJURIES TO THE SKULL.

All depressed fractures of the skull must be recognised and operated upon as early as possible. There is no other variety of treatment for a paralysis resulting from a depressed fracture, except to raise the depressed fragment.

(2) DISEASE—DEFORMITIES DUE TO DISEASE.

(*a*) Rickets is fairly common in India, both among the rich and the poor, due to faulty diet and other social defects amongst all castes. It is a good thing that the baby is disinclined to get up and walk. If the child is allowed to walk by artificial aid as push-cart, it is dangerous and leads to deformities and greenstick fractures. Proper treatment would be to treat the rickets and to give complete rest. Static deformities of the knee are very common. The reflex tone of a muscle depends on its state of tension, a state depending upon the absolute rigidity of the bones on which they act. If the femur becomes softened and loses its rigidity, the reflex system which regulates the static muscles of the thigh must be affected. The primary cause of the static deformities of the knee, lies in a defect or change in the osseous system, but the structures which are immediately to blame for the deformity are the muscles, biceps, femoris and the ileo-tibial band if weak for the bow-leg, and the inner muscular support if weak for the knock knee. In a rickety child, the ligaments of the knee-joint have thrown on to them a static muscular function with the result that deformities are produced. If we want to prevent such deformities it can only be done by relieving the lower extremities of their static function by preventing the muscles from coming into use until the skeletal parts have regained their normal health

and rigidity. So soon as the normal degree of rigidity is regained, the muscles will resume their normal static reflex function. This can only be done by the family physician recognising the defect in its very early stages. If a deformity has been allowed to develop, in addition to rest, corrective appliances in the form of an internal or an external splint can be applied. If the deformity becomes gross an operation has to be done.

(*b*) DISEASES OF BONE.

Every general practitioner must try to exclude an acute disease of bone called osteo-myelitis, when called to see a case of pyrexia in a child or in an infant. The symptoms become very severe during the course of forty-eight hours, and the infection spreads by perforating through the thin epiphyseal cartilage into the joint. An acute arthritis in an infant is always due to a neglected acute osteo-myelitis. Unless the bone end is opened up, the joint infection cannot be got rid of easily in cases which survive death.

CONGENITAL SYPHILIS WITH EPIPHYSITIS.

Must be recognised and adequately treated. Muscles must be prevented from wasting, and from becoming adherent by judicious massage.

(*c*) DISEASE OF JOINTS.

It is a well-recognised rule that every joint swelling with a temperature persisting for forty-eight hours, must be aspirated with all aseptic precautions to find out if the fluid is turbid or purulent. If it is purulent, it may become serious. In this way early infections can be detected and treated. Whether it is due to gonorrhœa or any pyogenic infection from blood-stream or skin surface in the case of punctured wounds, if the case is not early recognised as above and treated well, the patient when he recovers, will emerge with an amputation stump, or an ankylosed joint. It is a fundamental principle that all inflamed joints must be given continued, uninterrupted rest in a suitable position, till all signs of inflammation have disappeared. Major surgery is required to correct contracted joints by extension in a double-inclined plane or occasionally by a tenotomy or excision of the joint. These mutilating operations can really be avoided. Pathological dislocations must not be allowed to occur. The treatment of tuberculous disease of joints can be summed up in one word "rest." This rest can be given by a Thomas's splint and extension for lower extremity joints and by local splints without extension for upper extremity joints. This rest may be continued for one to two years. It can be done in the poorest patient's home. There are no special class of hospitals in this Presidency for this type of disease except the general hospitals which cannot afford to keep a patient for one to two years. Fixing the joints in a suitable position in plaster of Paris can also be done. The same remarks apply to spinal tuberculosis with greater force.

STATIC DEFORMITIES OF THE SPINE.

The recognition and prevention of the deformities of the spine will form part of the work of the school medical officer who inspects the schools. The gross deformities of a shortening of the thigh and leg due to any cause of a diseased joint, of a contracted chest, old empyema, may lead to scoliosis. This scoliotic posture is assumed to rest the muscles which balance the vertebræ upon each other and maintain the spine in the erect position. The antagonist of a spinal muscle is gravity. When gravity acts on one side, the muscles of the spine seek rest, by allowing the vertebræ to slew round until the movement is checked. The spokes which are employed to jam the vertebral wheel are the ribs, and it is the ribs which bring rest to the spinal muscles. Once the spinal muscles learn the trick of throwing their burdens on the ribs, they are apt to resort to it, time after time, until what was a functional posture becomes a confirmed deformity. If we wish to rest the spinal muscles or relieve the spinal column of its weight-bearing function, it is now clear that we can do so only by keeping a patient extended on his back in bed. Spinal supports of all kinds, corsets, mechanical appliances are useless. They cannot relieve the spinal column of its weight-bearing function. No instrument can transmit the weight of the head and shoulders and trunk to the pelvis and thus relieve the spinal column of the burden which falls on it when a patient stands. After relaxing the muscles they can be toned by judicial exercise of muscles. Ligaments cannot take the place of muscles, they only serve as auxillary supports to muscles.

DEFORMITIES OF THE FOOT.

There are certain deformities met with in this country among villagers and workmen as halax valgus and hammer toe. These conditions, without wearing a boot have not been investigated. A tight-fitting shoe produces a number of deformities, all of which could be prevented.

Lastly, the group of deformities that are due to disease of the muscles are dealt with. Whether due to injury or disease, muscle plays the predominant part, but taken singly, disease of tendon due to infection especially in whitows and minor injuries, have produced more deformities of the hand, than one ordinarily believes. Whillows must be properly treated. The most important group of diseases which produces paralysis of the muscles are acute anterior polyomyelitis and diphtheria. Prophylaxis of anterior polyomyelitis and diptheria, is undertaken on a vast scale in the western countries. It is the diagnosis and treatment of acute anterior polyomyelitis that concerns us most. The remarks mentioned under the heading of nerve injuries as regards a paralysed muscle, and the application of electricity apply to these muscles also. In the early stages, warmth by wrapping the part in cotton wool and keeping

the limb in a suitable position are all that is required. Electricity is useful only to find out which muscles are paralysed. The muscle groups that are not paralysed are found out, so that they can be encouraged to perform their work later on. In the majority of cases the spinal cord lesion is not so severe and if the muscles are not damaged by massage and electricity in the very early stages, they will recover. Muscles are the most educable of all the structures of the body. Hunter regarded the muscles as semi-conscious living things which had to be coaxed and humored back to health. After the muscles begin to recover with the limb put up in a position to prevent deformities that are likely to arise, the children must be made to exercise the muscles in a way which will keep them interested. If deformities are allowed to develop, many surgical measures are available and are necessary. The advances in the knowledge of surgery are really great in this direction, and they are not referred to here as it is our object to prevent deformities. I hope these principles may actually be carried out in our daily routine of work.

CASES AND COMMENTS.

A NOTE ON NEURAL SYPHILIS

BY

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FROM THE B. J. MEDICAL SCHOOL, AHMEDABAD.

A recent article by Major, O.A.R. Berkeley Hill, M.D., (Oxon) I.M.S., has drawn attention to the rarity of the para-syphilides in India. Syphilis itself is so common that two possible explanations present themselves to account for this rarity.

(1) It is possible that neural syphills is caused by specific neurophil spirochœte which is rare in India.

(2) The overwhelming amount of malaria in India may afford some protection to syphilitics in the same way as the most modern treatment in Europe seeks to cure them of the para-syphilides.

The object of this note is to suggest that the first has been up to the present the chief source of protection, and that possibly owing to infection brought from Europe by returning soldiers, this protection is about to be withdrawn.

During the last ten months, a number of cases suggesting the diagnosis of "meningo-vascular" syphilis have been observed in this hospital. Of these cases, a brief description of four follows, and the writers put forward the suggestion that the neurophil spirochœte has arrived in India, and that the time is not far distant when the para-syphilides will be as commonly observed as in Europe.

Before proceeding to these cases, it is necessary to emphasise the great difficulty in examining nervous cases in India. To elucidate an obscure nervous case requires, in addition to unlimited patience on the part of the examiner, intelligent co-operation on the part of the patient, and these conditions are very seldom obtained. Moreover, moffusil patients have a habit of discharging themselves prematurely from hospital if their case appears to make no progress, or even if progress appears satisfactory, regardless of the ultimate state of their disease. For this reason, only four cases are quoted, and they are as follows. The writers hope that they will focus still more attention on the problem of neural syphilis, which appears to threaten India :—

Case 1.—Male, Dirzi, aged 26, admitted May 31st, 1925.

The case suggested progressive muscular atrophy. Both upper limbs showed signs of a lower motor neuron lesion. Both legs showed signs of an upper motor neuron lesion. In addition, he suffered from retension of urine, and had a hard lump in the neck. The Wasserman reaction was strongly positive.

He was placed on intra-muscular bismuth injections (the routine treatment in this hospital) and given mercury and iodide by mouth. After six injections he was able to pass urine voluntarily and the lump in the neck was diminishing in size. The patient discharged himself on July 11th *i.e.*, less than six weeks after admission before any further improvement could be noted.

Case 2.—Male, aged 35, labourer, admitted July 27th, 1925.

The case showed an upper motor neuron lesion of all four limbs. The patient was unable to walk even with the aid of a stick. The Wasserman reaction was positive. At the end of the course of bismuth injections (10) the patient was much improved and he could walk well with the aid of a stick. Thereafter a relapse occurred and he discharged himself on November 19th little better than when he entered the hospital.

Case 3.—Male, aged 35, agricultural labourer, admitted August 22nd 1925.

The patient's complaint was of difficulty in passing urine, constipation, and weakness in the legs. He could only walk with the aid of a stick. The reflexes were those of an upper motor neuron lesion. He was energetically treated but did not respond. The leg muscles became flabby and wasted and the knee-jerks were lost. The patient discharged himself on September 30th. The Wasserman reaction was strongly positive.

Case 4.—Male, aged 35, "servant", admitted Oct. 31st 1925.

He was admitted complaining of tremors of the right side of the body. He could not speak distinctly, nor could he walk unaided. Romberg's sign was present, the pupils were sluggish, and the knee-jerks feeble. Early optic atrophy was present in both eyes. The Wasserman reaction was positive. He admitted syphilis 3½ years ago. He was placed on routine treatment.

The tremors largely disappeared, the patient could walk without help and the Wasserman reaction was reduced to "faintly positive" at the conclusion of his bismuth course. No further improvement followed and he was discharged on February, 6th, 1926.

Case 5.—A case has recently come under observation, which was sent by a magistrate for opinion as to whether the patient was sane and fit to plead. The signs found suggested meningo-vascular syphilis. The serum showed a negative Wasserman, but the cerebro-spinal fluid has been returned as positive. Apart from the mental condition, the chief signs are those of an upper motor neuron lesion of the legs. No further notes are available on this case as yet, but it would appear to take its place in this series.

SUPRA-PUBIC LITHOTOMY

BY

DR. D. C. OZA., M.B., B.S, CHIEF MEDICAL OFFICER, HORVI STATE.

Six weeks ago, an old man, aged 55 years, was admitted in Sir Waghji Hospital at Horvi for incontinance of urine and intolerable irritation of urethra. He was a police Naik and had copious discharge due to gonorrhœa. After usual treatment of gonorrhœa having been given, his bladder was examined and found to have been contracted containing a flat stone of the size of a small lemon.

He was operated supra-pubically. Before operation, attempt was made to fill the bladder with boric lotion but it could not hold the lotion, even half an ounce. During operation, the bladder having been patiently searched out deep down from the tissues an incision was given over the bladder having knife in the right hand and the incision guided between the left index and middle fingers. Stone having been felt in the incision it was taken out with the help of a bladder scoop.

The patient after the operation required stimulants and one hypodermic injection of strychnine of 1/60 gr. to support circulation. In the evening of the operation day, he had post-operative tympanitis, which was relieved by usual means of treatment. The bladder wound completely healed on the 18th day of the operation, function of the bladder fully restored to normal and incontinence stopped. Three months ago, a child aged 5 years was operated the same way for the stone and completely recovered.

The cases are of great surgical interest and especially the old man had co-incidentally both contracted bladder and incontinence of urine, the conditions being very unfavourable for the operation.

A SHORT NOTE ON THE TREATMENT OF MALARIA BY SODIUM CHLORIDE.

In 1925 January issue of the "Antiseptic", Dr. Sati Bhushan Mitra advocates the use of sodium chloride as a remedy in cases of malaria. Subsequently I had also seen in some lay papers that sodium chloride acts very well in malaria and as it is very much cheaper than quinine, its use has been advocated very much. Since reading these, I have had oppurtunities of testing the efficacy of this drug in 21 cases of proved malaria. Though the number treated is small, yet it will be of some practical use to the every-day busy practitioner who is always on the look-out for the latest fashions in medical treatment.

I am at a loss to understand the bactericidal action of sodium chloride on the malarial protosoa. Though the drug in very strong solutions has got "a certain antiseptic power" its antiseptic action, when it reaches the blood in doses as are advocated in the treatment of malaria is too small to exert any antiseptic action on the malarial parasite.

I am herewith attaching a statement of 21 cases treated by me. The mode of administration of the drug was as follows :—

Each patient was given a previous purgative, especially calomel, to clear the liver. The sodium chloride was fried on a frying pan to drive away al moisture and finely-powdered and administered only once in one ounce dose in a tumbler of water at about 7 A.M. on an empty stomach on the day previous to the day of getting the next attack of fever. The patient was given *absolutely no food* that whole day except few sips of hot-water to quench his thirst. No other medicine was administered to him. He was also put on very light diet for the next 48 hours. In some cases the drug caused vomiting soon after, in which case, it was repeated again until it was retained. In many cases it caused much thirst and the patients were given sips of hot-water to allay the thirst. The results as are seen from the following statement are not very encouraging but of 21 cases treated 7 had no relapse while others had and had to be controlled by the administration of quinine either by mouth or by intramuscular injection. In all these cases before the treatment was begun, the blood was microscopically examined and the presence of malarial parasite was definitely made out. The malarial parasite was also found to be present in cases of all relapses.

I would like to know through the columns of your valuable journal the experience of brother practitioners sending in the detailed reports of cases of *approved* malaria treated by this drug.

The statement of cases treated is as follows :—

STATEMENT OF CASES OF MALARIA TREATED WITH SODIUM CHLORIDE.

Serial No.	Date of first attack of fever.	Variety of malarial parasite.	Date of administration of sodium chloride in 1 oz doses.	Result.	Remarks.
1	10-1-26	Benign tertian	11-1-26	Cured	No attack of fever afterwards.
2	11-1-26	do	12-1-26	do	do
3	do	do	do	do	do
4	13-1-26	Malignant tertian	14-1-26	do	do
5	14-1-26	do	15-1-26	Failure	Got fever on 16th, 17th and 18th. Had to be controlled by intramuscular injection of quinine bi-hydrochloride.
6	do	do	do	Cured	Got temperature of 100°F, on 16th evening, afterwards no fever.
7	do	Benign tertian	do	do	No fever afterwards.
8	15-1-26	Malignant tertian	16-1-26	Failure	Had fever on 16th, 17th, 19th and 20th. Fever had to be controlled by intramuscular injections of quinine by-hydrochloride.
9	18-1-26	do	19-1-26	do	Got fever on 20th and 22nd, controlled by quinine orally.
10	19-1-26	Benign tertian	20-1-26	do	Got high temperature 101° F on 21st, controlled by oral quinine.
11	do	do	do	do	20th, 21st and 22nd, fever on three consecutive evenings controlled by oral quinine.
12	20-1-26	do	21-1-26	Cured	No subsequent fever.
13	21-1-26	do	22-1-26	Failure	23rd evening high rise of temperature controlled by oral quinine.

STATEMENT OF CASES OF MALARIA TREATED WITH SODIUM CHLORIDE—*cont'd.*

Serial No.	Date of first attack of fever.	Variety of malarial fever.	Date of administration of sodium chloride in 1 oz doses.	Result.	Remarks.
14	23-1-26	Benign tertian	24-1-26	Failure	High temperature in the evenings of 24th and 25th, controlled by quinine orally.
15	24-1-26	do	25-1-26	do	25th evening 104° F 26th evening 105° F, 27th 102° F, controlled by intramuscular quinine.
16	27-1-26	Malignant tertian	28-1-26	do	29th 100° temperature on 2nd Feb. '25, had high rise of temperature 105° F, controlled by quinine orally.
17	27-1-26	do	28-1-26	do	28th evening 105°F, 29th evening 102·4°, put on oral quinine, 1st evening 105°F quinine intramuscularly. No fever afterwards.
18	28-1-26	do	29-1-26	do	30th evening 105°F 31st 102° F, controlled by quinine orally.
19	29-1-26	do	30-1-26	do	31st evening temperature 104·4° F, 1st evening 103·4°F, oral quinine, 2nd 100°F, controlled by quinine.
20	31-1-26	Benign tertian	1-2-26	do	2nd evening temperature 106°F, controlled by oral quinine.
21	1-2-26	Malignant tertian	2-2-26	do	2nd evening 101°F, 3rd evening 104°F, oral quinine, 4th evening 102° F, afterwards no fever, controlled by oral quinine.

A CASE OF ASPIRIN IDIOSYNCRASY

BY

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MASULIPATAM.

A female patient, aged about 25 years was under my treatment for gastric trouble. She was slightly neurotic. Occasionally she used to complain of pains in different parts of the body and one day she appeared to have rather severe pains over nape and sides of the neck. To allay the pains, I prescribed aspirin powder in 5 gr. doses. Four powders were taken home and one was administered at about 12 noon. Immediately on taking this, she began to feel bad.

The following symptoms and signs were said to be present :—A sense of tightness all over the body, flushing and itching sensation were complained of. Eyes got conjested and there was some chemosis of the conjunctivæ and lachrymation. Erythematous patches with slight swelling were also noticed, scattered over the body.

On noticing her condition a man ran up to me and wanted that I should go and see her immediately. I saw her at about 2-30 P.M.

She appeared to have developed an urticarial rash; only the typical urticarial wheals were not present. The other signs and symptoms noted above were also present

I gave her an injection of adrenalin solution ½ c.c. and assured her that her condition would soon be better and that she need not be anxious.

All the symptoms subsided and by evening she was comfortable.

I, of course, left strict instructions not to administer any more of the powders.

Cases of aspirin idiosyncrasy are reported occasionally. My object in bringing this case to the notice of the profession is the rarity of the condition.

In view of the very common use of the drug, it is worth-while to remember that occasionally, though rarely, the drug may not be tolerated.

ASCITES

BY

DR. NORENDRA KUMAR DASS, M.B., M.C.P.S. (Eng) M.R.I.P.H. (Eng).

"VISAGRATNA."

I had the opportunity to treat a few cases of ascites under the methods described below with great success very lately.

I am describing here only two complicated cases, cured under my treatment very successfully.

Case. I. Mejarman Chaprasi, an old Nepali man.

He was suffering from ascites for a long time. Sometime ago he was treated in a local hospital without any successful result. He was tapped in the hospital thrice but used to get relapse every 14th to 18th day or so. I got this patient sometime in May 1924.

The prominent symptoms he had then :—Big abdomen, (48"), emaciated, loss of appetite, yellow-eyes, urine passed, only twice in 24 hours and about 2 oz. at a time, headache etc.

First of all I treated him with the following :—

Re :

Pot acetas—oz. iv
Spt. eather nit—oz. iv
Tr. digitallis—oz. ii
Aqua—ad oz. viii

Ft. mist. Put 8 doses.

Sig. one dose to be taken T.I.D.

Diet :—Milk and sago. (meat and fish were stopped for ever).

Bath :—Warm-bath every day.

This treatment was continued for about two months when the patient was announced completely cured, and accordingly he resumed his own work.

The man worked alright for 2 months and after that, all on a sudden he got relapse and I was immediately sent for. I called in and on examination found the former symptoms again.

I prescribed as before but to no result, though the medicine was regularly administered for a fortnight or so. One of these days, I was informed suddenly that the patient's abdomen was so big that he could not breathe properly. I immediately got up to him with my assistant and with the necessary instruments for tapping. I examined him and found him worse than before. His abdomen measured about 50". I tapped the abdomen under strictest antiseptic measure immediately and collected about 25 c.c. of the fluid drawn out in a sterilized test-tube and injected 20 c.c. of this with a well-sterilized syringe into the patient's gluteal muscle. I drew out about 5 seers of fluid from the abdomen. I prescribed the following medicine to take internally for one month :—

Re :

Pot acetas—oz. iv
Spt. eather nit—oz. iv
Tr. digitallis—oz. ii
Aqua—ad oz. viii

Ft. mist—Put 8 doses.
Sig-one dose B. D.

After a month the patient was advised to take the following pills for sometime :—

Re :

Pepsin parcii—gr. iii
Aloin—gr. ½
Assafætid gum—gr. ¼
Resin podophylin—gr. ¼
Saponis—qs.

Ft. One pill. Mithe 12 such.
Sig. One pill to be taken B. D. after food.

This treatment has completely cured the patient and one year has elapsed, he has been working regularly till now without the least trouble.

Case II.—A Nepali woman, aged about 42.

The day, she came under my treatment, I tapped her abdomen with strictest antiseptic measure and drew full 15 lbs of water. I collected in a sterilized test-tube about 10 c.c. of the fluid drawn and injected the same into her gluteal muscle. The woman being very weak, I dared not inject more than this. I did not give her any medicinal treatments excepting syrup hæmoglobin—one tea-spoonful with plain water just before meals twice daily—for anæmia.

The woman has perfectly cured with this one injection. Several cases have been cured successfully with the injections (intramuscular) of the fluid drawn. Some cases are cured with one injection only—and some require 4–6 injections or so, i.e., as many times as they need tapping.

The above-mentioned 2 patients of mine were worst-possible cases I have ever seen and they are very successfully cured, though the latter died of an attack of malarial fever later on.

I request my fellow practitioners through the medium of this paper, to experiment these methods of treatment among their respective patients and publish their results in the "Antiseptic" for the good of their fellow-brethren.

INFANTILE LIVER AND ROUND-WORMS

By
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"VISAGRATNA".

Sometime ago I had an opportunity to treat a few cases of Infantile liver and a few cases with round-worms as well. Among them I had two-

most serious cases—one was a case of Infantile liver with round and pin-worms and the other was only a complicated Infantile liver case. I managed to cure them successfully, but they had to continue my treatments for a considerable period of time.

Case I. The patient was a girl of a Bengali gentleman, aged about 3 years.

Previous History:—The child maintained a very good health from her birth. She was well-fed with Indian sweets and milk, it being our special Bengali custom to give plenty of sweets in the hands of children whenever they want or weep for. The girl had a sudden attack of intermittent fever about 4 or 5 months ago and since then she had been suffering from slow fever, enlarged liver, indigestion, obstinate constipation etc. She was previously treated with plenty of quinine both by mouth and by injection without any successful effect.

Present symptoms:—Afternoon rise of slow fever, bloated abdomen, indigestion; wants to eat always even after the principal meals, but cannot digest, coated tongue, very anæmic, obstinate constipation—cannot pass stools without glycerine enema which the parents give on every alternate day, stools black, sometimes white and very hard 15—20 round-worms and lots of pin-worms expelled with the stools; every 3rd or 4th day 2 or 3 white round-worms are expelled with stomach-contents when the child vomits. Liver badly enlarged. No enlarged spleen. Puffy-face, very emaciated and thin. I prescribed the following:—

1. *Re*:—Vin. Ipecac—m v
   Spt. ammon aromt— m xiv
   Tr. Rhii—m xxii
   Sodii bicarb—gr. xii
   Thymol—gr. i
   Aqua menth pip—ad oz. ss
   Ft. mist one mark in the ozvi—12 marks.
   Sig. one mark to be taken T.I.D. 5—10—'23
   Repeat 12—10—'23.

2. *Re*:—Hydrarg c creta gr. ½
   Aristochin gr. ii ss
   Sacc. lactis gr. iv
   Ft. pulv one.
   Mithe 6 powders.
   Sig: One powder to be taken B.D. 5-10-'23.

Add. Hexamine gr. iii to each powder of the above prescription and repeat. 12-10-'23.

19-10-'23.—The patient is getting better gradually. The child has been improving in every respect excepting the constipation, Instead of giving glycerine enema, glycerine suppository or soap suppository is advised to introduce every day before principal morning meal. Fever is gradually stopped.

The child should be bathed with tepid water (in which a tea-spoonful of ordinary kitchen-salt should be put), every alternate day: bathing of head with cold-water and hot-water sponging should be given every day.

Diets:—In the morning—7-30 A.M. 8-30 A.M., a slice of bread with a cup of well-boiled but warm milk (without sugar): ½ orange if available or ½ lemon with little salt and sugar in empty stomach (morning).

At about 11 A.M.—Rice, fish-curry (should not be hot), or chicken-soup, dal or any other digestible Indian vegetable curry, dahi (curd) with little salt or sugar every day:

At about 1 P.M. a cup of lemon syrup or lemon-juice with a little sugar and some fruits (not much).

3 P. M.—A cup of milk.

6 P. M.—Milk-roll or bread 2 or 3 slices as she can eat with a cup of milk.

The Re: Nos. 1 and 2 should be continued as before and the following also should be given this day:—

3. Re: Kepler's malt extract with cod liver oil—one bottle.

Sig: ½ Tea-spoonful with milk to be taken after meals twice daily Should there be any rise of temperature, this medicine must be stopped until the temperature is normal.

For constipation the following should be given every day in the evening at about 5 P. M. instead of suppositories:—

Sig:—½ Drachm to be taken every evening as directed.

29-10-'23.—The child had a sudden attack of fever again from last night. This morning there is no temperature. Other symptoms are favourable.

The previous medicines are all advised to be stopped and the following is prescribed instead:—

(A) Re: Creosote—m ii
   Thymol—gr. i
   Tr. Rhii—m xxii
   Vin. Ipecac—m vi
   Tr. Cinchonæ—oz ss
   Ft. mist. mithe—oz ii

Sig:—One tea-spoonful to be added to some water and given quickly T.I.D.

(B) Re :—Calomel gr. ¼
Eu-quinine gr. ii
Salol—gr. iii
Mag. carb—gr. ¼
Guaicol carb—gr. ii
Ft. Pulv one—mitte 8 powders.
Sig :—One powder B.D.

(C) Kepler's malt extract with cod liver oil to be given as before but not in fever.

The confectio sulphur should be discontinued.

31-10-'23:—The child has had no fever since: bowels moving freely —once every day: other symptoms favourable: The medicines are repeated and advised to continue for a week as before.

I got reports after one week that the child was improving rapidly: the medicines were repeated and instructed to be continued as before for a week.

In the middle of November 1923, I examined the child and found her much improved. No fever, got rid of anæmia, general health seemed improved to some extent, no worms passed with the stools, no vomiting. Enlargement of liver had been diminished a little; colour of stools not changed, yet tongue was little improved: puffiness of the face was also improved. I discontinued the medicine No. A and prescribed the following instead :—

(D) Re: Tr. nux vom—m ½
Tr. Rhii Co—m xx
Tr. enonymin—m ii
Vin. ipecac—m iii
Tr. Gentian Co—m xiv
Tr. calumbae—m xv
Ext. gulancha liq—m xv
Kalmegh liq—m xx
Aqua—add oz ii
Ft. mist: one dose: mithe oz ii, 8 doses.
Sig:—One dose T.I.D. for 1st 2 weeks, then B.D.

The other medicines to be continued as before and after one week the powder No. B should be given only once a day. From the last week of November the powder No. B was stopped altogether.

This treatment completely and successfully cured the child in 2 months' time: the prescriptions C & D were continued for complete three months.

Remarks:—In this case calomel was given for about a month and "Kalmegh" was continued for a considerable period of time which is the best cholagogue for infants. Many eminent physicians say that, "Kalmegh" alone can cure the worst case of infantile liver. In infantile liver we should always try to increase the bile secretions, and if we can successfully get it increased, the bowels will move normally and the child must improve gradually.

Here, in this case, as soon as I gave the bitter tonic containing "Kalmegh" the child rapidly improved. Kepler's malt extract with cod-liver oil was given to build the general health.

'Calomel' is also one of the good liver medicines we have in our hands. But this does not suit in all systems. Some can bear calomel quite well and some cannot. Children generally can do well with calomel. Here we have seen that this child was treated with calomel for about a month without any bad effects. Here calomel helped to move the bowels without any enema or suppositories. Children who cannot take calomel should better be given "hydrarg c creata gr. ½ to gr. 1" dose in each powder. Fresh dahi (curd) home-made, lime-juice, oranges and whey, these are the best diets for the liver patients. I should say they are not only the diets but they act in the system as medicines too. Dahi contains lactic acid which is very helpful in the system of sluggish liver or a dyspeptic patient. Lemon is also one of the best medicines, I should say, for those who suffer from the difficiency of biles.

Case II.—The patient was a Nepali boy of about 6½ years.

Previous history.—The child was very fond of chilly and hot-curry. He could not eat his food without a chilly since he had started eating rice. From last eight months the boy gradually lost appetite. Bowels sometimes very constipated and sometimes very loose, white-coated tongue, very badly anæmic, cannot eat, fortnightly slow fever.

Present symptoms :—Slow fever every now and then in the evening, enlarged liver, thick white-coated tongue, constipated, colour of stools black, sometimes white, no appetite, cannot eat at all, wants to eat only a handful of rice with chilly and salt, very emaciated (skin and bone only), cannot walk even, hard abdomen and little swelling of the feet. I examined the stools but found no parasites. I prescribed the following :—

1. *Re* :—Calomel—gr ¼
Sodii bicarb—gr. ii
Ft. powder one—mithe 8 such
Sig:—One powder B.D.
2. *Re* :—Tr. nux vom—m ½
Tr. Rhii Co—oz ss
Vin. Ipecac—m iv

Tr. Enonymin—m iii
Tr. Gentian Co—m xx
Tr. calumbæ m xx,
Tr. kalmegh liq—zss.
Inf. chiretiæ—ad. ozss.
Ft. mist. one dose mithe—oz. iv, 8 doses.
Sig :—One dose T.I.D.

Diets, etc.—The boy must abstain from chilly and hot-curry, etc. Plenty of milk (well-boiled) with sago was advised. Gr. ii of sodii bicarb should be put in milk and sago each time to help digestion. Dahi (curd) was advised to be taken twice daily with little sugar and salt—but not more than 4 oz. at a time. I was surprised to note that the patient was cured under this treatment alone in a month's time. After one month I prescribed the following for some time as a general tonic :—

Re :—
Hydrarg c creta—gr. ½
Ferriet ammon cit—gr. 2½
Eu quiuine—gr. i
Ft. One powder—mithe 8 such.

Sig :—One powder to be taken B.D. for a week and once daily for another two weeks.

Comments :—Lately I have treated with great success a few more complicated cases of infantile liver and round, thread and pin-worms with kalmegh, gentian, calumbæ, enonymin, nux vom, etc., and with small but repeated doses (in mixture) of thymol. By the grace of God, I did not loose a single case.

I can strongly recommend "Kalmegh" for the best treatment of "Infantile liver" and for any kind of liver troubles of the kiddies. It is not only recommended for the infants but is also very useful for any liver disease of any person. I have seen in many cases only "Kalmegh" can cure the disease in a very short period of time. Among the cholagogues we have in our hands, "Kalmegh" is the best in my opinion. Fresh juice of 'Kalmegh' leaves acts much better than the liquid extract of Kalmegh which we buy from the market. Dr. S. K. Mookerjee has written very highly of this drug in his "Infantile liver."

Diets.—Diets should be light but nourishing. Lime-juice should be given as much as the patient can take.

Mother's breast-milk is the best diet for the infants. Infants left on breast-feeding only, generally do escape from the clutches of this dreadful disease. In case breast-milk is not available, fresh cow's milk of a healthy cow may be substituted. Goat's milk also may be given. Ass's milk is the best, if available.

Bottle-feeding should be avoided as much as practicable and if urgently necessary, hand-feeding with a spoon is advised. Milk must be well-boiled and a pinch of white sugar should be added to each feed and given when tipid. The baby should be fed several times instead of over-feeding at a time. *Malted, tinned milk must not in any case, be used for any baby.* Babies fed with all these patent milks—generally do suffer from liver complaints. The malted and condensed milk must not be given to the babies—specially in tropical climates like India. Now-a-days we think it to be an aristocratic feeding with all these malted milks and without which a baby cannot be brought up. This is why we loose so many kids in the prime of their lives.

Bath :—The patients must have warm-bath everyday, except when they have high fevers and other unfavourable complications. About one tablespoonful of ordinary kitchen salt should be added to a medium bucketful of bath water.

"*Alui*" is known as the best domestic medicine for children, in Bengal. It is mainly used in diseases of liver. 'Kalmegh' is the principal constituent of this 'Alui'. Besides kalmegh, it contains ajowan, Anisi, Caraway, Bael, Cardamom, Parsley and some other important vegetable drugs of 'Ayur-vedic," science. Kalmegh Co, tablets of Messrs. B. K. Paul & Co., Calcutta, resemble closely the "Alui" in its composition and produces similar effects.

In concluding this article, allow me to tell a few words more on the subject. I am very pleased to report here, that, I have been using thymol in small and repeated doses as mixture with liq. extract of kalmegh, Tr. gentian, calumbæ, euonymin, nux vom, Rhii and spt. ammon aronut for the treatments of worms with liver complaints—specially for the children—and I find this as specific. Last two years, I have obtained cent per cent. success with this. I generally use thymol from gr. i to each dose, thrice daily for a child of 2–5 years. Doses are increased and decreased according to the age and condition of the patient.

ERYSEPELAS

By
G. D. RAGHUNATHA RAO, REGISTERED MEDICAL PRACTITIONER,
STUDENT, D. T. M., CALCUTTA.

In the January 1926 issue of the "Antiseptic", on page 35, appears an article under this heading. N. Dr. K. Das, the writer of the article concludes that "Creosote lotion is the best for the local treatment of erysepelas". While agreeing with him in so far as to the good effects of creosote in these cases, I take leave to point out that there is another valuable remedy which acts like a charm. I refer to Tr. ferri per

chloridi. This, when painted over the affected regions, not only limits the spread but promptly reduces the inflammation. The following case will serve to corroborate my statement:—

Case.—A Hindu female child, aged 5 years came to me one morning with an intensely swollen face and fever. The swelling involved the entire face including the eyelids. The skin was intensely red, œdematous, tightly stretched. Her temperature was 102·8°F. Pulse 100 per minute and febrile tongue.

History.—She had a small boil on the cheek which was punctured with a needle. Next day the swelling began to appear commencing from the region of the boil. She had chills and rise of temperature.

She was brought to me on the 2nd day of the appearance of the swelling. After diagnosing it as erysepelas, I painted the whole face with Tr. ferri per chlor. B. P. and instructed the father of the child to paint it thrice a day. No other application was tried.

Internally she was given.

Tr. ferri per chlor m v
Mag. sulphate zss
Glycerine m x
Aqua ad. oz. i
T. D. S. after meals.

Diet.—She was given milk and sago gruel only with orange-juice.

Next day the swelling was half reduced and the child was distinctly better. The same treatment was continued and by the 3rd day, the swelling completely disappeared and the temperature came down to normal. Encouraged by this, I tried the same treatment in my subsequent cases and I am surprised to find with what rapidity Tr. ferri per chlor. checks the spreading of the disease and cuts short the duration. I may mention here that before this I was applying only creosote but now I prefer Tr. ferri per chlor. seeing the remarkable rapidity and the certainty with which it acts.

Lastly, I would like to know if others have had similar experiences with Tr. ferri per chlor. in cases of erysepelas.

A CASE OF ASTHMA TREATED WITH EMETINE

By

V. N. DEUSKAR, L.C.P. & S.; I.M.D. HADDO, PORT BLAIR

About the middle of July 1924 at Ahmedabad Mr. P. an engineer aged 47, came under my treatment for asthma, the duration of which was 2 years. The patient was getting asthmatic fits every 3 or 4 days.

Cardiac and renal origin of the disease was excluded by repeated examinations of the heart and urine. *One thing particularly noteworthy was that between the attacks, the lungs kept perfectly clear, which as a rule is not the case with asthamatic subjects.* I was consequently led to suspect strongly that some cause in the digestive tract must be responsible for the fits in this case. Errors in diet were taken into account and excluded. No particular article of food had to do anything with the attack. Later when the stools were examined they were found to contain entamœba histolytica cysts. As the patient denied having suffered from dysentery within his remembrance, repeated examinations of his stools were carried out but with the same findings each time.

On the strength of these findings, *in emetine only* appeared a radical line of treatment and a hope for relief and a course of 12 emetine injections each 1 gr. with a drop of six days after 6 injections was decided to be given and Deek's intensing Bismuth treatment was combined with this.

After two injections of emetine, the patient had to go on tour for about a week on a business of considerable importance. As such, the patient had to be put on emetine-bismuth iodide.

The result was indeed very encouraging. The fits under treatment entirely stopped. Four months after the institution of treatment the patient had a mild attack once but it was all due, I think, to an unusually heavy motor ride on a cold day. For a further 4 months the patient was under observation. Not only that he had no fits but also from mere bone and skin he became moderately plumpy, with an increase in weight and marked improvement in the tone of his general health.

I last saw the patient in good health, in May 1925 and I hear that he keeps quite well to this day.

Conclusion.—Asthma in this case was, in all probability, a symptom of amœbiasis.

The Antiseptic

APRIL, 1926.

THE TREATMENT OF APPENDICITIS.

It might be thought at first that appendicitis and operation follow one another so closely that it is quite unnecessary to say anything more on the subject. But human nature as a rule shuns operation so much that it is perhaps within the experience of most medical men to be asked if it is not possible to avoid going under an anæsthetic and be operated. What then should be our arguments to reduce the patient or relatives to consent to an operation? Statistics taken at most hospitals go to prove that the longer most cases of appendicitis are left, the greater the mortality. Most or practically all the cases that were operated within the first 24 hours survived. Tables collected from the figures of the various London hospitals show that of every hundred cases seen, to wait from the first day to the second will throw away three or four lives, and waiting from the first to the third will sacrifice eight lives per hundred cases. In olden days when, the policy of waiting till the patient was really ill before operating, was in force, the death-rate was nearly three times the present rate. Again, by operating early all the dangers of complications are avoided. Normally, the wound of an appendicitis operation heals in a fortnight but if suppuration is present the necessity for drainage occurs and the wound is quite likely to discharge for many weeks. Then again, there is the possibility of a recurrence. It may be taken as roughly correct to say that if a person has one attack of appendicitis, there is a 50 per cent. probability of a further attack, the date and severity of which are unforeseeable. Evidently therefore, the probabilities are very great that there will have to be an operation one day; if so, why not have it done at the first possible warning? Another question which medical men are often asked is whether the patients' life can

be saved by an operation. This sometimes is a great puzzle. One can never promise. One is often asked whether by not operating, the patient will die. This again is a very difficult question to answer. Perhaps the best and most reasonable answer to this is "I can never promise he will not die".

The second great question that might come up for consideration in every case of appendicitis is whether it is even wise to wait and postpone an operation. For this purpose all cases of appendicitis can be classified into five main heads:—

(1) Non-perforated cases, with rise of temperature.
(2) Non-perforated afebrile cases.
(3) Perforated cases with localised peritonitis.
(4) Perforated cases with walled-off abscess.
(5) Perforated cases with widespread and general peritonitis. For the reasons mentioned previously there is obviously nothing else to do but operate as soon as diagnosed in those cases where there is no perforation but only slight rise of temperature. The best clinical guide to operation will be a rise of temperature above 99° and a pulse above 90. In the second group of cases where there is only slight pain, perhaps some vomiting, tenderness over the right iliac fossa but no rise of pulse or temperature one is justified in waiting. A careful watch should be kept over these cases of appendicular colic and the appendix should be removed if the temperature and pulse show a rise. If, however, the pain and tenderness do not disappear within a week or if there is a recurrence of the attack, operation should be advised. In the third group of cases where the appendix has perforated there is no second line of treatment to be followed except an operation. But the difficulty is to decide if the appendix has perforated. When however, it is clear, by the presence of a palpable lump and widespread rigidity of the abdomen, that local peritonitis is present and if the patient is in a toxic condition, opinions differ as to the best method of treatment. Some surgeons proceed to open the abdomen at once and remove the appendix. There are others again who postpone appendicectomy to a stage later than the third or fourth day. Till then the patient is put in the Fowler position, given morphia and fomentations for pain, and nothing by mouth except water, so as to inhibit peristalsis. The argument is that the death-rate is high when the operation is performed on the third and fourth

days, but falls afterwards; by the end of ten days it is very low. If time can be afforded for the purpose, anti-bodies accumulate in the blood, the pus becomes shut off by adhesions, and the acute toxæmia passes off to some extent. The supporters of the first theory however argue that the cases which follow this happy course would have been the ones which would have done well after a third or fourth day appendicectomy, and that the patients who are in real danger of a fatal issue will not settle down if the surgeon withholds his knife at that period but go from bad to worse, and that a few of them may be saved by third or fourth day operating, who would be lost by further postponement. In the fourth group of cases where the disease has taken a happy course due to a mild infection or to a retrocæcal position of the appendix, or to the fortunate accident that it had omentum wrapped around it, operation is the only course but there need be no hurry. Too much delay may mean spread of the abscess or rupture into the bladder or in some other disastrous direction. It is better while operating, to remove the appendix. In the last group of cases where there is widespread peritonitis, operation is possibly indicated. Even if the patient is very ill it is worth-while to drain the pelvis at least under a local anæsthetic. Possibly, the new operation of draining the thoracic duct may help to reduce the mortality in these dangerous cases. But experience is still wanting regarding this new method of saving life.

There are cases which show a persistently high temperature even after the removal of the appendix. We can of course allow a week, unless, there are signs of serious trouble, before becoming alarmed about it. At the end of a week, a routine search must be made for the course. The first thing we search for is suppuration of the abdominal wall. Pericæcal abscess due to inadequate drainage at the operation or premature removal of a drain may also keep up the temperature. Pelvic abscess due to inadequate cleansing or lack of drainage may very often give rise to a persistent temperature. Sub-phrenic and other intra-abdominal abscesses may occur anywhere and cause a rise of temperature. Except in the case of sub-phrenic abscess, these are easily felt and can be dealt with on the usual surgical lines. Pneumonia, empyema, bronchitis, portal pyæmia are among the other causes that contribute to the temperature remaining high. To discuss the individual treatment of these diseases will be out of place here. They should all be treated on the usual lines.

CURRENT TOPICS.

SURGERY.

Treatment of Chancroid with the Anti-streptococcus Vaccine of Nicolle.—Addressing the Societe medicale des hopitaux recently, Hudelo, Dubamel and Drouineau reported their favourable results with Nicolle's of Tunis, in a number of Ducrey bacillus infections. Their results confirm those published by several authors (Dubreuilh and Broustet, and Massias). The latter authors used a vaccine prepared by Nicolle himself. Hudelo and his co-workers used a commercial vaccine.

From the facts observed they draw the following conclusions: 1. In the chancroid stage, vaccino therapy causes rapid cicatrization and prevents the dissemination of the bacillus with the formation of secondary chancres. 2. In the bubo stage, during the pre-suppurative, inflammatory period, vaccino-therapy combats pain and lymphatic involvement. In the suppurative stage, sometimes purulent resorption must be treated by a combination of vaccino-therapy with local treatment (simple puncture.) 3. In the phagedenic stage, whether in the superficial or in the deeper tissues, vaccino-therapy brings about rapid cicatrization, provided one first gets rid of associated infections, and stimulates tissue repair. Spontaneous reinoculation has not been observed. Positive auto-inoculation before the treatment was begun has become negative during the course of the treatment.

The technic is very simple. Injections are made intravenously. They are given usually every two days, or at longer intervals if the reactions have not completely subsided. The initial dose is 225 million bacilli, which is increased to 335, 450, 550, and 675 millions. Nor more than six injections are given in a series. Ordinarily the effects are manifested following the first injections, and very often one cannot go beyond the third. As a rule, when the therapeutic action has been secured, it is well to give a supplementary injection. These injections cause violent general reactions, sometimes with pallor, tachycardia and tendency to faint. The patient should be advised of this. Marked reactions are due less to the vaccino-therapy itself than to the depression in certain patients who have been long infected. All the patients at the first injection give a febrile reaction. The temperature may reach 40°C. (104 F.) three hours, after the injection, remain there for from six to nine hours, and then drop to normal within from twenty-four to forty-eight hours. The fever may, in rare cases, be accompanied by chills and vomiting. This therapy acts by means of shock. The authors have begun to study into this coloidolastic shock, but their results are as yet insufficient for definite deductions. Hudelo and his co-workers have studied the specificity of the intradermal reaction

with this vaccine and think that it is not absolute. In cases of mixed chancre, vaccino-therapy may bring out the characteristic indurate erosion of the associated spirochetal infection.

To sum up. Of nineteen cases in which vaccino-therapy was tried, the authors experienced but one failure. Treatment and convalescence are shortened and overcrowding of hospital wards thereby prevented.

Bismuth Hydroxide in Syphilis.—P.W.Portmann (Dermatol. Woch. December, 5th 1925, p. 1781, recommends twice weekly injections of a milk colloidal preparation of bismuth hydroxide in syphilis. Commencing with a dose of 50 mg. of a proprietary preparation, all subsequent doses were of 100 mg., the total number of injections given to each patient ranged from ten to fourteen. After such a course of intravenous injections it was found that the Wassermann reaction became negative, even in cases in which a previous course of salvarsan injections had failed to produce this result. After the first injection condylomata began to shrink, their surfaces became dry and usually after three or four injections, they disappeared entirely. In almost all cases spirochætes had disappeared within twenty-four hours of the administration of the first injection. The value of bismuth in salvarsan-resistant cases was shown by a case of secondary syphilis in which there were numerous hypertrophic papillomata on the genitals. The Wasermann re-action was strongly positive after a course of twelve injections of salvarsan, which had no effect upon the papillomata. After one injection of 50, mg. of bismuth diasporal the warts began to shrink and after three or more injections (each of 100 mg) they disappeared, and the Wassermann reaction became negative. Though most bismuth preparations tend to produce stomatitis, gingivitis, and renal lesions, in no case in Portmann's series was there any evidence of toxic effect.

MEDICINE AND THERAPEUTICS.

Ether Injections in Pertussis. A. Goldbloom (Journal American Medical Association, December 5th, 1925 P. 1791) discusses the treatment of pertussis by intramuscular and rectal injection of ether and points out the advantages of the latter method, except in very severe cases. Within one or two minutes after the injection of 1 or 2 c. c. of ether intramuscularly it could be detected in the breath and remained n ticeable for six to eight hours, with immediate and lasting improvement to the paroxysms; but the pain attending its administration and the possible danger of necrosis are serious drawbacks. The beneficial effect appears to depend upon the temporary sedative action during excretion through the alveoli any specific bactericidal action being as yet unproved. Goldbloom has

treated twenty-one children by rectal injections twice daily of half a drachm of ether in half an ounce olive oil, and finds that the results compared, favourable with those in patients treated intramuscularly. The rectal method can be easily employed by the mother or a nurse; the child is not in fear of a painful operation; there is no danger of necrosis; and the treatment can be safely continued for a much longer period than in the case of intramuscular injections. In an infant, aged 2 months, the paroxysms were completely controlled for six or eight hours, during which time, the child scarcely coughed, though it ate and slept well.

CORRESPONDENCE.

To THE EDITOR, "*The Antiseptic*", MADRAS,

SIR,

On page 520 of your October issue is a descriptive article on "the Treatment of Hæmorrhoids by Submucous Injection". The authors of this article have entered into a wealth of detail and are imbued with a great degree of circumspection!

I have had a larger experience with this Injection method and have never found recurrence of the condition. At the outset I must confess to disappointments when I used the carbolic acid formula as recommended in the article. I have a strong preference for adrenalin chloride solution put up in sealed ampoules to ensure freedom from contamination following previous use, the sealed ampoule further ensuring absence of deterioration due to exposure.

Briefly my technique is as follows:—

1. Bowels to be freely opened on the day of injection by a dose of mag. sulph or liquid extract of cascara.

2. Milk diet and rest in bed for 24 hours before the injection is made.

3. The patient is placed face and abdomen downwards while an assistant reveals the pile to be treated by separating the buttocks.

4. An injection is then made with a sterilised glass syringe of the usual 20 minim capacity. The injection is made slowly and, during the operation, the needle is manœuvered in all directions so as to ensure the adrenalin the reaching all points in substance of the "growth." I have never found more than 15 minims necessary for a single pile. On withdrawing the needle, which should be done immediately, to prevent regurgitation into the barrel of the syringes, gentle massage is performed by grasping the pile between the thumb and index finger. The patient remains quiet in bed for three hours after which time, all pain will have disappeared.

It will be observed that there are fundamental differences between the technique as described by the authors of the article and by the writer of this note and I offer this short note for a trial.

I have treated external piles by this method without any hesitation and it has given the best results in my experience and in that of my colleagues who have tested it. The pain in the case of external piles depends largely on the personal equation but the personality of the medical attendant is not to be ignored.

I have very recently treated a Gunner of the Royal artillery by this method and after two injections done at a five-day interval and the elapse of a fortnight thence, the pile was completely cured—a large external pile. Inflammation is naturally a contra-indication but when once this is made to subside by local treatment, the infection can be carried out without delay.

All the instruments necessary in the case of an external pile is a well-fitting hypodermic syringe, preferably glass, for obvious reasons. No lubricants are necessary but a spot of vaseline before the next act of defœcation subsequent to the injection is useful to avoid friction and discomfort.

Yours, etc.,
B. J. BOUCHE,
Asst. Surgeon, I.M.D.

Jutogh, Simla Hills,
25-10-'25.

BOOK REVIEWS.

A MANUAL OF PRACTICAL X-RAY WORK.

By John Muir, B.Sc., M.B., Ch.B., B.Sc., (Public Health), Secretary, British Institute of Radiology, Asst. Radiologist, University College Hosp., London.

In collaboration with Sir Archibald Reid, K.B.E., C.M.G., M.R.C.S., L.R.C.P., D.M.R.E. (Camb.), Suptd. of Radiological Dept., St. Thomas's Hospital, London and F. J. Harlow, B.Sc, A.R.C.Sc., Principal, Municipal Technical College, Blackburn, with 456 Illustrations. Pages 524. Published by *William Heinemann* (Medical books) *Ltd.*

The value of X-rays in diagnosis and prognosis of diseases has been greatly enhanced during the present decade by the manufacture of more powerful apparatus, the improvement of special technique and accumulation of knowledge. This book furnishes a comprehensive introduction to study and gives the practitioner an intelligent conception of the possibilities and limitations of radiological assistance. Every branch of radiological work has been surveyed and a simple condensed account is presented. This book will surely prove as a valuable educative medium and as a book of more than average merit.

BUCHANAN'S TEXT-BOOK OF FORENSIC MEDICINE AND TOXICOLOGY.

By John E. MacFall, M.D., D.P.H., M.B, Ch.B., Ninth edition, revised and enlarged. Illustrated. 444 pages. 1925. [E. & S. Livingstone, Edinburgh.]

The increasing importance of medical evidence renders a knowledge of forensic medicine necessary to every medical practitioner and the book before us, the popularity of which is evident by the number of editions into which it has run in a comparatively short time, is a good and authoritative addition to the already existing works on the subject. The book is divided into two sections—Part I dealing with Forensic Medicine and Part II with Toxicology. In this book recent changes in legislation have been noted, especially in regard to the sale of poisons. The procedure in cremation is described and a chapter on Medical conduct is added which embodies the instruction of the General Medical Council on the subject. A special feature is the large number of photo micrographs of the various poisons. A very useful book, comparatively cheap and very well got up. We recommend it to general practitioners and students of medical jurisprudence.

MANUAL OF HYGIENE AND PUBLIC HEALTH.

A text-book for medical and public health students by Jahar Lal Das, D.P.H., Officiating Assistant Director of Public Health, Behar and Orissa, Member of the Royal Sanitary Institute, etc., with an introduction by Lieut. Col. W. C. Ross, M.B., C.H.B., D.P.H., I.M.S., Director of Public Health, Behar and Orissa. Pages 634. Published by *Butterworth and Co. Ltd., India.*

This is perhaps the only book on hygiene and public health, that is written principally from the Indian standpoint which may be taken as typical of the conditions prevailing in all tropical and semi-tropical countries. The wide experience of the author both as a teacher and sanitarian, has been of considerable assistance in making the book thoroughly practical and adapted to the needs of both the students and medical officers of health of large cities and rural areas as well. The book will surely and adequately fulfil the purpose for which it is intended.

HIGH FREQUENCY PRACTICE FOR PRACTITIONERS AND STUDENTS.

By Burton Baker Grover, M.D.; Author of Handbook of Electro-therapy; President of the Western Electro-therapeutic Association 1919-1920, etc. Illustrated with engravings. Thoroughly revised and rewritten. Fourth Edition. Pages 555. Published by The Electron Press, Kansas City.

Of late, there is an increasing interest, in the high frequency practice being taken by the profession. Every day new methods in technique are being advanced through the experience of different operators. This book deals with a discussion of the principles of the production of the different electrical currents and the application of diathermy in medicine, surgery and other branches in the medical science. This book gives a good conception of the methods of application and the value of this modern therapeutic agent as a supplement to the already known methods in the art of healing. The methods of treatment given in this book are founded on personal experience

of the author and also reference has been made to all available literature on the subject. The information contained in this volume will surely prove an incentive to the use of less empirical and more scientific methods in the application of high frequency currents.

SLIT-LAMP MICROSCOPY OF THE LIVING EYE.

By Dr. F. Ed. Koby (Basle) Late first Assistant of the Ophthalmic Clinic, corresponding member of the Ophthalmological Society of Paris. Translated by Clara Lomas Harris, M.B. Chief Clinical Assistant, Royal London Ophthalmic Hospital, with 43 illustrations Pages 221. Published by J. & A. Churchill, 7, Great Maralborough Street, London.

This is a translation, into the English language, of Dr. Koby's book on slit-lamp microscopy in the French language. to provide the English reader with a text-book which would also be useful for those who wish to become acquainted with microscopy of the living eye. There are few text-books on this subject where the methods of use and fields of application of the slit-lamp are so clearly set out. In this book special stress is laid on the methods of examination which are of fundamental importance, and more specially on the phenomena of reflection of light. The congenital anamolies and senile modifications have been rather over-elaborated, but the beginner may thereby be prevented from mistaking them for pathological changes, a mistake which easily happens. Each chapter deals with the special technique of the examination of the organ to be considered, normal appearance, congenital anomalies, senile modifications, traumatic lesions and pathologic changes. This book will surely make a profitable reading to those who are interested in Ophthalmology.

INSECTS AND DISEASES OF MAN,

By Carroll Fox, M.D., Surgeon, U. S., Public Health Service; Lecturer on medical entomology to the class of student officers, hygienic laboratory, etc., with 92 illustrations. Pages XII + 349. Published by P Blakistons Son and Co., 1012, Walnut St., Philadelphia.

This book gathers together in a concise and practical way, the information necessary for a student taking up the study of medical entomology, or for the health officer working in the field of preventable diseases, transmitted by anthropods. The book deals with the medical entomology and the various diseases carried by anthropods among human beings,—such as malaria, yellow-fever, dengue fever, filariasis, trypanosomiasis, plague, etc. The diagrams and illustrations are excellent and educative. We commend this book to our readers.

THE ETHICS OF BIRTH CONTROL.

Being the report of the special committee appointed by the National Council of Public Morals in connection with the investigations of the National birth-rate commission—with an introduction by the Lord Bishop of Winchester—1926. 179 pages Price 2/6 net [MacMillan & Co., Ltd., London].

There has been abundant evidence both in Europe and America for the wide-spread and increasing use of contraceptive methods during the last fifty years. The National Council of Public Morals appointed a committee to examine this problem (from the moral and religious point of view) and give a report which may guide those who find themselves confronted with this problem in which is involved not only individual problems but also the prosperity of the races. They discuss the subject of Practice of Birth Control under two main classifications—Educational and Domestic; Medical and Economic. The methods of birth control—by self-control and by contraceptives are also fully-discussed and the committee comes to very interesting conclusions. The second part of the book contains the statements and evidences submitted to the committee by such eminent persons as Lord Dawson of Penn, Rev. Prof. Carnegie Simpson, Lady Barrel, Mr. Harold Cox, The Hon. Bertrand Russel and others. The book should certainly be of great interest to those who are interested in this all-important subject.

SEX AND EXERCISE.

A study of the sex function in women and its relation to exercise by Ettie A. Rout. Forward by A. C. Haddon, M.A., Sc.D., F.R.S. Page 97. Published by William Heinemann (medical books) Ltd, London.

Miss. Ettie Rout's interesting book is an effort to explain briefly the mechanism, functions and development of the lower half of the woman's body in a simple language. The measures, which the author advocates, to rectify the various defects, are based on sound anatomical and physiological principles and if adapted, will surely lessen the incidence of disease and promote the happiness of women.

A TEXT-BOOK OF PHYSIOLOGY.

By William D. Zoethout, Ph.D., Professor of Physiology in the Chicago College of Dental Surgery (Loyola University) and in the Chicago Normal School of Physical Education. Second edition. Illustrations 186. Pages 616. Published by the C. V. Mosby Co., St. Louis.

This book is intended to fill the gap between the larger text-books and those offering a brief course, for those having a limited time for the acquisition of a basic knowledge of the subject. More space has been devoted to the practical side of nutrition, physical exercise, mental work, fatigue and kindred topics than usually is found in texts on physiology. The diagrams are excellent and will be of great educative value. In writing the book clearness of expression has been striven for all through. Many references are made to monographs dealing with specific topics especially to those which have appeared in physiological review during the last few years.

A DESCRIPTIVE ATLAS OF RADIOGRAPHS OF THE BONES AND JOINTS FOR STUDENTS AND PRACTITIONERS.

By A. P. Bertwistle, M.B., Ch.B., Leeds. Resident Surgical Officer, General Infirmary at Leeds. No. of Radiographs 299. Pages 193. Published by John Wright and Sons Ltd., Bristol and Simpkin. Marshall, Hamilton, Kent & Co. Ltd., London.

This atlas provides the students and practitioners with a handy book of reference for the interpretation of the radiographs which are becoming increasingly more useful for accurate diagnosis. The atlas contains plates of the normal bones and epiphysis, arranged on the left side of the volume while the pathological conditions appear on the right-hand pages to facilitate more easy and ready comparison. A series of radiographs showing the appearance of the centres of ossification at different ages is also given. The book will be very helpful to the beginner.

BOOKS RECEIVED.

The following books have been received and the courtesy of the Publishers in sending them is acknowledged. Reviews will be published from time to time. [ED. ANTISEPTIC.]

The Manager of the Antiseptic will be pleased to supply the readers any books acknowledged hereunder, or others at the Publishers' price. When sending their order, the readers are requested to send a remittance for the full value of the book. That a remittance in advance should be requested is no reflection on the credit of any reader of the Antiseptic, but is simply a condition necessitated by circumstances.

Ashtanga Sareeram (In Sanskrit)—By P. S. Varier, Physician and Proprietor, Arya Vaidya Sala. Published by E. P. Krishna Varier Kottakkal. Price Rs. 12.

The Radium Institute, Ranchi.—A report of work from 1—4—22 to 31-12-24 from the Superintendent, Government Printing, Bihar and Orissa.

Optical methods in Control and Research Laboratories.—Published by Messrs. Adam Helger Ltd 75-A., Camden Road, London N. W. 1.

Spectrum Analysis with higher Instruments.—Published by Messrs. Adam Helger Ltd , 75-A, Camden Road, London, N. W. 1.

Pygmaleon or the Doctor of the Future.—By R. McNair Wilson, M.B., C.H.B. Published by Messrs. Kegan Paul Trench, Trubner, and Co., Broadway House 68-74, Centre Lane, London, E.C. 4. Price 2s. 6d.

Sex and Exercise.—A study of the Sex Function in women and its relation to exercise. By Ettie A. Rout. Published by Messrs. William Heinemann (Medical Books), Ltd., 20. Bedford St., London W. C. 2. Price 6s.

Physical Fitness in Middle Life.—By F. A Hornibrook. Published by Messrs. Cassell and Co. Ltd. La. Balle Sauvage, Ludgate Hill, London E. C. 4. Price 6s.

Ultra-Violet Rays in the Treatment and Cure of Disease.—By Percy Hall, M.R.C.S., L.R.C.P. Published by Messrs. William Heinemann (Medical Books) Ltd., 20, Bedford St., London W. C. 2. Second edition. Price 7s 6d.

Pharmacopœia of St. Mary's Hospital, London.—Published by Messrs Harrison & Sons Ltd . St. Martin's Lane, London W.C. 2. Price 1sh.

Psycho analysis Analysed—By P. McBride, M D., F.R.C.P.E., and F.R.S.E. Published by Messrs. William Heinemann (Medical Books) Ltd., 20 Bedford St., London W. C. 2. Price 3s. 6d.

The Theory and Practice of the Steinach Operation.—By Peter Schmidt. Published by Messrs. William Heinemann (Medical Books) Ltd., 20, Bedford St., London W. C. 2. Price 7s. 6d.

Flower Scent.—By F. A. Hampton, M.A., B.M., B.Ch. Published by Messrs. Dulan, & Co, 34-36, Margaret St., London. Price 6s.

Notes on Medical Case-taking and the Examination of Patients.—By G. S. Haynes, M.D., M.R.C.P. Published by Messrs. W. Heffer and Son Ltd., Cambridge. Price 3s.

A Manual of Chemistry Vol II. Organic Chemistry.—By Arthur P Luff, C.B.E., M.D., B.Sc., F.R.C.P., and Hugh G. H. Candy, B.A., B.Sc., (Lond.) Published by Messrs. Cassell and Co. Ltd. La. Ba alle Sauvage, Ludgate Hill London E. C. 4. Price 6s.

A Hand-book of Midwifery for Midwives, Maternity Nurses and Obstetric Dressers.—By Comeyns Berkely, M.A., M.C., M.D., F.R.C.P., M.R.C.S. Published by Messrs. Cassell and Co., Ltd., La Balle Sauvage, Ludgate Hill, London E. C. 4. Price 8s.

Clinical Methods.—By Robert Hutchison, M.D., F.R.C.P. and Harry Rainy, M.D., F.R.C.P. and F.R.S.E. Published by Messrs. Cassell & Co. Ltd. La. Balle Sauvage, Ludgate Hill. London E. C. 4. Price 12s. 6d.

INDEX TO ADVERTISEMENTS.