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The Antiseptic

A Monthly Medical Journal

Edited by

Dr. U. Rama Rau, M.L.C. & U. Krishna Rau, M.B.,

CONTENTS.

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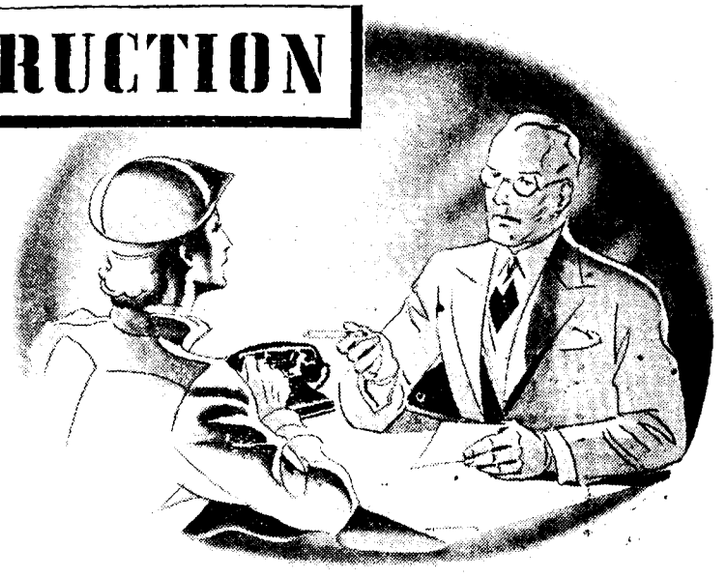

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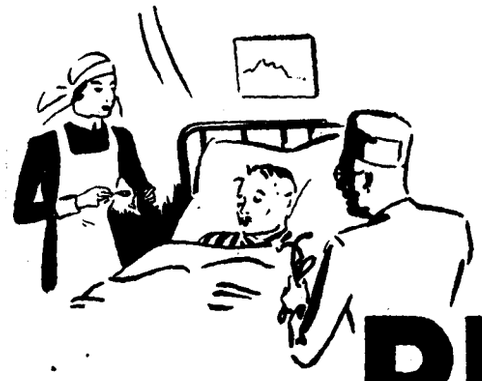

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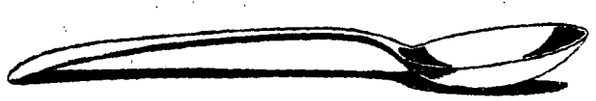

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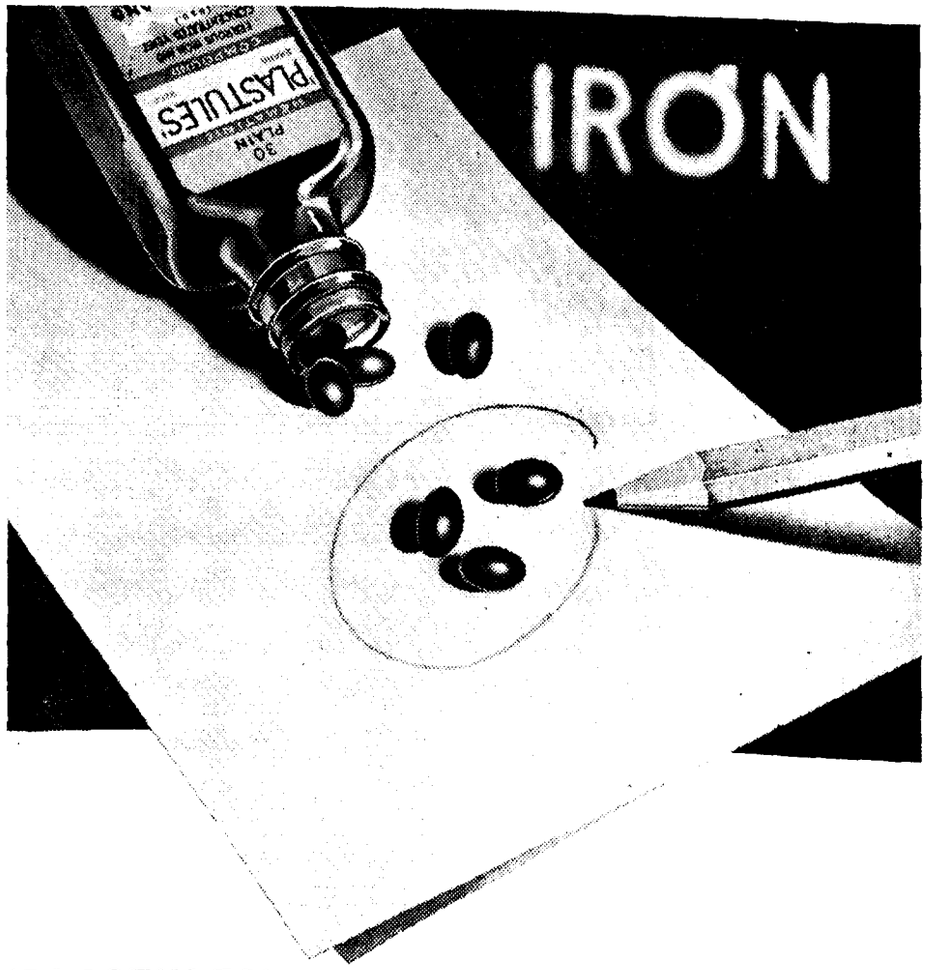

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ORIGINAL ARTICLES

Rauvolfia Serpentina*

(Syn.—Ophioxylon Serpentinum) (N. O. Apocynacae.)

BY

G. Ghosh, M.B., B.S., D.T.M.

Allahabad.

Vernacular Name :—(Hindi)—Chota Chand. (Bengali)—Chandra. (Sanskrit)—Chandrika ; Sarpagandha.

Habitat:—Tropical Himalaya and plains near the foot of the hills from Moradabad to Sikkim. It is found throughout India specially in Bihar and Nepal. It grows wild in many districts of north Bihar and in Patna and Bhagalpur.

Description :—A small erect shrub, 6 to 18 inches high, rarely attaining 2 to 3 feet, in a rich soil. Leaves 3" to 7" by 1½ to 2½ inches, elliptical lanceolate, or obovate, acute or acuminate.

Flowers :—Pinkish, nearly 1 inch long arranged in terminal or lateral corymbose cymes. Calyx-Small bright red.

Roots :—Roots are crooked, tapering and ¼ to ¾ inch in diameter.

Parts used :—The roots, leaves and juice.

History of the Drug.—Rauvolfia Serpentina is held in high esteem by the local people where it grows and is used as febrifuge and as an antidote to snake bite. ROXBURG, DYMOCK and HOOKER mentioned about it half a century ago. According to HORSEFIELD (*Asiatic Journal*, Vol. VIII Page 148) it is employed by the Javanese as an anthelmintic. DR. PULNEY ANDEY reports that a decoction of the root is employed during labour to increase the contraction of the uterus. According to RUMPHIUS, the juice of the leaves is instilled into the eyes by the natives

* Specially contributed to 'The Antiseptic'.

of India and Java, as a remedy for the removal of opacities of the cornea. In Bombay, most of the labourers who come from the southern Konkan keep a small supply of the root which they value as a remedy in painful affection of the bowel such as colic and dysentery.

In Bihar, where this plant grows wildly, it is used by the poorer classes for putting their children to sleep.

It has been used by many Kavirajes or Indian physicians as a depressant to mental and bodily activities.

DR. GANANATH SEN advocated its use in insanity and high blood pressure.

This drug is rapidly engaging the attention of the medical men and chemists in India and abroad (Holland, Africa, and America) and at present a number of workers are busy investigating the chemical composition, and pharmacological action and the therapeutic uses of this valuable drug.

Chemical Composition.—SEN and BOSE (1931) have found two alkaloids in the root with different melting points. The quantity of the total alkaloids has been estimated to be quite high, amounting to about 1 per cent of the dried root. The root also contains a lot of resin and starch and when incinerated leaves about 8 per cent of ash consisting mainly of Potassium Carbonate, Phosphate, Silicate and traces of Iron and Manganese.

DRS. SALIMUZZAMAN SIDDIQUI and RAFAT HUSSAIN SIDDIQUI at the Tibbi College, Delhi, have found five new alkaloids to which they have given special names:—

GROUP A:—Ajmelin group, consists of three white crystalline weak bases.

GROUP B :—Serpentine group consists of two bright yellow crystalline stronger bases.

Chemical examination of this drug is also being conducted at the School of Tropical Medicine, Calcutta. Only one alkaloid so far has been isolated in a pure state. Its melting point is 202°C. Further work is in progress.

Pharmacological Action.—According to SIDDIQUI and SIDDIQUI (1931) the white and yellow bases were isolated from two distinct groups and the dose of both was found to be the same in frogs.

SEN and BOSE (1931) studied the pharmacological action of the drug on higher animals *e. g.* cat. The alkaloids isolated by them showed very definite results. They showed :—

(1) The drug is not an irritant. 1% solution of the alkaloids injected under the skin or deep into the muscles did not produce any inflammatory change in the tissues.

(2) *On the alimentary tract* :—The alkaloids produce immediate and definite relaxation. In a small percentage of cases the drug irritates the gastro-intestinal tract and produces vomiting and diarrhœa,

(3) *Circulatory system* :—(*a*) On the heart muscle it causes a slight depression when it is used for a long time. But the effect passes off quickly as soon as the use of the drug is suspended ; (*b*) On the circulation the drug acts by slowing the pulse generally and reducing the volume of the pulse. The latter is due to its action on the vasodilator mechanism of the autonomous nervous system. The effect of the slowing of the pulse and vasodilatation is to lower the blood-pressure.

(4) *Respiratory system* :—BOSE has definitely shown that the drug has a stimulating effect on respiration. He has further proved that this stimulating effect is not due to its action on the vagus as it persists even after the exhibition of Atropine (which paralyses the vagal nerve endings). This effect seems to be due to direct stimulation of the bronchial musculature.

(5) *Nervous system* :—In human beings the drug in 10 to 30 grains doses has a profound sedative effect on the nervous system. It produces sound and refreshing sleep usually lasting for 10 to 12 hours. The drug is aid to have a marked depressing effect on the sexual centres.

(6) *On the uterus* :—The alkaloid produces contraction of the multiparous or pregnant uterus but in virgin uterus it produces relaxation.

Therapeutic Uses.—It has a pronounced sedative effect on the brain. DR. GANANATH SEN and DR. K. C. BOSE advocate its use in cases of insanity with violent maniacal symptoms. The average dose of the powdered root is 15 to 20 grains, 2 to 3 times a day. After taking this medicine the patient gets calm and refreshing sleep, becomes easily controllable, and takes his nourishment readily. Within a few days the patient's senses are restored and he behaves normally.

In hyperpiesis without marked atheromatous changes, these authors find the drug very useful. Five grains twice a day is enough to bring the pressure down in a few days. This fall of blood pressure as we have already seen is partly due to the depressant action of the drug on the heart muscle and partly to the decrease in tone of the peripheral vessels, causing vasodilatation.

I have used this drug in many cases of insanity with violent maniacal symptoms. Every one of them improved and responded well to the treatment. I am thoroughly convinced that this drug is of great value as a general sedative and is very efficacious in insomia and certain types of insanity. It will, indeed, be a very valuable addition to the list of our existing sedatives and hypnotics.

I have also tried this drug in a few cases of high blood pressure. It seems to have a definite action in reducing the blood pressure (both systolic and diastolic) and relieving the symptoms of the patient.

In view of the fact that the results obtained from various remedies that are used at present for mental disorders, *e.g.* Bromides, Luminal,

Sulphur injections, etc., etc., are far from satisfactory and at times profoundly disappointing, the exploration of an indigenous medicine like R. Serpentina demands immediate attention and further investigation. I earnestly invite the attention of the medical profession in general and that of the Mental Asylum authorities in particular, to give this valuable remedy a fair trial and publish their results in the various medical journals. With a view to create interest in this drug I have sent copies of my previous paper on this drug to the Superintendents of 23 Mental Asylums of India, Burma and Ceylon. Out of these, only ten showed their interest and eagerness to use this drug and asked for samples which I have readily supplied. Now I am awaiting their findings and experiences about the drug.

The drug is best given in the powder form, stirred up with sugar and water and given in the morning on an empty stomach. I have given as much as 45 grains of the powdered root, twice a day in some very stout and violent patients without any bad effect. The one great drawback is its very bitter taste. I am of opinion that this difficulty can be obviated by putting the drug in an injectable form prepared from its total alkaloids. The total alkaloids when administered in 1% strength either subcutaneously or by intramuscular injection is non-irritating. The proper dose of the alkaloids for an adult will probably be 1/3 to 1/2 a grain.

Within a few minutes of taking this drug the skin of the patient, particularly that of the face, becomes red and flushed and the eyes seem congested. After a few doses the patient starts behaving differently. A patient who has not slept for days and is violently maniacal will gradually become easily controllable and take his nourishments readily. He will get calm and refreshing sleep. Within a few days his senses will be restored and he will behave normally. The medicine must be continued for sometime even after all the symptoms have subsided. I have also noticed that the drug distinctly increases the appetite and makes the bowels regular. Sometimes it acts as a purgative. When it is exhibited in large doses for any length of time, it produces incontinence of urine in some cases. All these unpleasant symptoms pass off as soon as the dose is reduced or the use of the drug suspended. I have never known it to produce any untoward effect. I am trying to get into touch with a few chemists who could isolate the total alkaloids of the drug for me.

Lastly, I express my thanks to DR. J. H. MITTER, Head of the Botany Department of the Allahabad University for kindly helping me to identify this plant.

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Rauvolfia Serpentina

By G. Ghosh,

Rauvolfia Serpentina Plant.

Functional and Reflex Disorders in Relation To the Ear, Nose and Throat*

BY

V. R. Kamath, M.B.B.S, D.L.O. (ENG.).

Madras.

In opening the discussion on 'Functional and reflex disorders in relation to the ear, nose and throat', I propose to do little more than present to you a list of the well-recognised conditions which may form the topics of discussion, together with brief explanatory remarks and my personal observations in connection with some of these affections.

Not the least difficult part of this discussion, to my mind, is the matter of definitions. The term 'functional' which has supplanted the older and much-abused word 'hysterical' may avoid the unpleasant connotation of the latter, but is not the less vague and arbitrary in its limitations of meaning. But though it has too often served as the limbo wherein to thrust all ill-understood disorders, and though the progress of medical science is constantly transferring diseases from this limbo to other better understood spheres and categories, I think that most of us will admit that there is always bound to remain a natural group of disorders to which the name 'functional' or some other suitable name must be applied. Functional disorders have some characteristics in common :—

(1) They cannot be assigned to any known organic lesions.

(2) They are influenced by mental and psychological factors, to a much greater degree than are organic disorders.

(3) Their symptoms are paroxysmal, leaving the patient apparently normal in the intervals; even if they are continuous, the exacerbations are extraordinarily abrupt in their onset and termination.

(4) They do not conform to, or fit in with, our knowledge of the anatomy and physiology of the regions concerned. There is an incongruity and lack of proportion among the symptoms, and an inconsistency between these and the patient's general condition.

(5) Even when the symptoms are of long duration, they are liable to cease suddenly and permanently, with or without treatment.

When we come to consider reflex disorders, the situation is much easier. All reflexes are physiological; but when they manifest themselves with frequency and severity, we have to regard them as pathological, and should endeavour to seek the cause of irritation or

* Paper read before the meeting of the Association of Otology and Laryngology, Madras, and specially sent to 'The Antiseptic' for publication.

weakness of the reflex arc. The factors concerned with the production of reflex disorders are :—

(1) Irritation of afferent nerve-terminals or of ganglia situated along the course of sensory nerves.

(2) Instability or irritability of the nerve-centres in connection with the sensory nerves.

Either or both of these factors operating on a reflex nerve-arc, generate a nerve-force which manifests itself as a sensory, motor, vasomotor or secretory disturbance in a part or the whole of the area supplied by the nerve.

We may conveniently divide the various symptoms and syndromes into two main groups :—

(1) Those referred to ear, nose or throat regions, but not due to any local disease.

(2) Those pertaining to distant organs or regions, but originating in ear, nose or throat pathology.

I shall first deal with the former group, starting with :—

The Ear.—1. *Reflex otalgia* :—Earache may be due to pathological conditions in the nose, pharynx or oral cavity. This is explained by the fact that the fifth and ninth cranial nerves, which are the sensory nerves for these areas, are represented in the ear by the Auriculo-temporal nerve (supplying the external auditory meatus) and the tympanic branch of the Glossopharyngeal nerve (Jacobsen's nerve) respectively. Thus, carious teeth, quinsy, congestion of the lingual tonsil, adenoids, paranasal sinusitis, and growths in the upper part of the larynx, may give rise to referred pain in the ear. I owe the knowledge to MR. MOLLISON, E. N. T. Surgeon to Guy's Hospital, that irritation of the fifth or ninth nerve of one side can give rise to reflex pain in the *contralateral* ear ; that is to say, we should not ignore the possibility of crossed reflex otalgia. I have had several such cases in my own experience,—an unerupted wisdom-tooth, for instance, causing attacks of earache on the opposite side.

2. *Deafness* :—I have dealt in a previous discussion with the subject of functional deafness following slight trauma, and also presbyacusis.

3. *Tinnitus* :—This subjective symptom is apt to be so elusive and obstinate that one is often tempted to relegate it to the functional disorders and thus relieve one's conscience about the problem of its treatment. Apart from the noises in the ear due to local anatomical abnormalities, blood-vascular disorders, chronic catarrhal otitis media, otosclerosis, toxic affections or inflammations of the labyrinth, and certain lesions along the central pathways of auditory sensation, I think there is a residual group of cases in which the tinnitus occurs reflexly from the viscera supplied by the vagus and the sympathetic. Impulses from these viscera travel by way of the inferior cervical sympathetic ganglion to the labyrinths, the vessels of which are thereby

caused to dilate. If we also remember that the auricular branch of the vagus (Arnold's nerve) supplies a part of the ear, and that it has a direct connection with the geniculate ganglion of the facial nerve (which innervates the stapedius muscle), and also an indirect communication through the nucleus ambiguus and the descending tract of the fifth nerve, with the nucleus of the fifth nerve (which is motor to the tensor tympani muscle), we can understand the rationale of, say, a dilatation and curettage of the cervix uteri to cure a long-standing and distressing tinnitus.

4. *Vertigo* :—Giddiness may be due to such a great variety of causes, and the particular cause is so difficult to determine, that we should be chary of invoking a diagnosis of functional vertigo without a thorough investigation of the middle-ear tract, the visual apparatus, the cervical spinal region, the central nervous system, and any possibility of toxic affection of the labyrinth. Nevertheless, it is said that vertigo may be met with in neurotic subjects as an hysterical manifestation. The '*temporo-mandibular joint syndrome*' consists of headache, deafness and vertigo. It is met with in old or edentulous subjects who exhibit the condition of 'overbite' caused either by loss of teeth or ill-fitting dentures. The diagnosis is helped by the tenderness to palpation of the temporo-mandibular joints, the relief of symptoms obtained by interposition of a flat object between the teeth, and the temporary disappearance of giddiness on Eustachian inflation. The treatment consists in referring the patient to a good dentist.

The Nose.—1. *Nasal obstruction* :—I classify cases complaining of nasal obstruction into four groups :—

(1) Those who have a real mechanical obstruction, as for example a grossly deviated septum, chronic hypertrophic rhinitis, or nasal polypi.

(2) Those experiencing a subjective feeling of obstruction, but in whom the nasal cavities are patent or even abnormally wide. Vasomotor rhinorrhœa and atrophic rhinitis are typical examples of this variety.

(3) Those in whom nasal obstruction apparently persists even after the causative condition has been successfully treated ; say, for instance, after removal of adenoids or nasal polypi. These are the functional cases, in whom the habit of mouth-breathing outlives its necessity and usefulness. They have to be re-educated to breathe through the nose by breathing exercises, outdoor games, and encouragement ; the tying up of the lower jaw at night is a practice to be deprecated.

(4) Those cases in whom nasal obstruction is aggravated during the menstrual periods or is associated with uterine disorders. These form the reflex group of cases. A lot of experimental and clinical work has been done in recent years on the connection between the nose and the reproductive system, and there is no doubt that turgescence of

the nasal mucosa does occur reflexly from ovarian and uterine conditions. Sneezing is a symptom commonly accompanying this type of nasal obstruction.

2. *Epistaxis* :—It is common knowledge to all of us that bleeding from the nose occurs in some individuals (generally women) at varying intervals throughout life, without any discoverable cause, general or local, and without affecting the patient's health in any way. Whether we call such epistaxis physiological or functional, it is important to exclude all organic causes before naming it so, and then to abstain from any surgical measures, which are unnecessary and may be harmful.

3. *Disorders of the sense of smell* :—Parosmia constitutes one of the epileptic auræ. I have had three patients who have never perceived any smell in their life. Before dubbing such subjective disorders functional, we should carefully look for evidence of chronic paranasal sinusitis, especially of the posterior ethmoidal and sphenoidal cells.

The Pharynx.—1. *Paralysis of the soft palate* :—Cases have been described of neurotic individuals, in contact with patients with organic palatal paralysis, imitating the speech of rhinolalia aperta. In such functional paralysis, however, the soft palate can be made to contract by tickling it. The treatment is by suggestion, faradic current, and humming exercises.

2. *Spasm of the pharynx* :—This may be of the tonic or clonic variety. In the former, the patient complains of a sudden ache and a 'tightening of the throat' (at the sight of food, for instance), while in the latter there are clucking noises in the pharynx, and the soft palate has been reported as vibrating at the rate of up to 240 per minute.

3. *Anæsthesia, paræsthesia neuralgia* :—These have been described as occurring in neurotic patients or in women at the menopause. The neuralgia radiates from the throat to the neck.

The Larynx.—1. *Cough* :—I have been accustomed to think and to teach that reflex cough is due to three chief causes :—

(1) Wax in the ear—The auricular branch of the vagus is no doubt responsible for the production of cough by wax, fungus, keratosis, or (rarely) a foreign body in the ear. I would say that wax in the ear is a very common cause of persistent cough in children ; and when we syringe it out in such a case, a valuable hint as to cause and effect is obtained by the patient coughing just when the plug of wax delivers itself from the ear. A tiny crust of dried wax sticking to the posterior wall of the meatus may produce a cough, even in adults.

(2) Sensitive spots in the nose—McBride's cough-spots are found generally in the region of the tubercle of the septum and on the anterior ends of the middle and inferior turbinals. A patient with such spots may be made to cough as often as we please by touching them with a blunt probe. The simplest pathway for the nervous impulse is along the fifth nerve and sphenopalatine ganglion to the nucleus of the fifth, and thence by the descending tract of the fifth to the nucleus of the vagus. Cauterisation of these sensitive spots often cures the cough ; but we should not forget that a diffuse sensitivity of the nasal mucosa may be due to allergy or paranasal sinusitis.

(3) Congestion or hypertrophy of the lingual tonsil—The posterior part of the tongue, and the epiglottis, derive their sensation from the ninth nerve. Normally these two structures do not touch each other. If, as a result of general congestion of the pharynx or a localised hypertrophy of the lingual tonsil, the latter comes in contact with the epiglottis, the abnormal sensory impulse reaching the common nucleus of the ninth and tenth nerves produces a train of symptoms,—cough, discomfort in the throat, feeling of a lump in the throat, persistent hemming and hawking, vocal fatigue, hoarseness, etc. I could quote from my own experience scores of such cases,—patients who were supposed to be suffering from growths in the larynx, whooping cough, enlarged bronchial glands, etc. being cured of their symptoms very quickly by treatment to the lingual tonsil. I feel that the so-called 'smoker's throat' is in every instance due to congestion of the lingual tonsil. The diagnosis of these cases is easy, the treatment is simple, and the results rapid and often dramatic. I use ten per cent Silver Nitrate solution which is applied vigorously to the back of the tongue with a curved cotton-wool applicator, care being taken to ensure that the solution does not drip into the larynx. Adenoids may give rise to a similar reflex cough, but I believe that the mucous secretion from the nasopharynx is more often the real explanation of cough in these cases.

(4) Functional cough undoubtedly exists ; the apologetic cough, the barking cough of puberty, the habit cough, and the hacking cough of psychotic individuals, are familiar examples.

2. *Dysphonia* :—Reflex hoarseness is very commonly due to hypertrophy of the lingual tonsil. In obstinate cases, when Silver Nitrate applications afford only temporary relief, I have had gratifying results with the internal administration of Crookes Collosol Iodine (oral), one teaspoonful in water thrice daily, for adults. Functional dysphonia is caused by spasm of the adductors and tensors of the vocal cords, in neurotic subjects ; sudden failure of the voice during public speaking or singing is the typical example, and has been termed 'mogiphonia.'

3. *Aphonia* :—Functional aphonia may well form the subject of a paper, by itself. I regard it in most cases as a sort of 'escap

phenomenon,'—the patient who has been subjected to psychological trauma, and having a lot to say about it, but knowing she must not do so on account of social or moral taboos, subconsciously seeks relief in a functionally forced silence.

4. *Laryngeal stridor*:—Apart from the congenital variety (which is believed to be due to an inco-ordination of the cortical centres for the vocal cords), and the stridor met with in obstructions, or inflammations of the larynx, reflex stridor is an important entity. It is met with exclusively in children and is, in my experience, most cnmmonly a prodromal or concomitant manifestation of measles or any of the other acute infectious fevers. It has also been attributed to teething, rickets, intestinal parasites, and enlarged bronchial glands. Laryngismus stridulus, as it is termed, is diagnosed by the inspiratory stridor and apnœa during attacks, normal respiration between attacks, and by the spasm of the adductors seen by laryngoscopy. In the treatment, I have found that Bellergal (Sandoz) in frequently repeated small doses is very effective. Tracheotomy is rarely, if ever, necessary.

The Œsophagus.—1. *Dysphagia*:—This may be due to:—

(1) Functional paresis or spasm. In the former case, the bolus cannot pass easily from the mouth to the pharynx, and the patient complains that food lingers in the mouth for some time before he can swallow it; in the latter, the bolus cannot pass from the pharynx to the œsophagus and is rejected, the patient complaining that food comes back to the mouth after being swallowed. Functional dysphagia belonging to these categories is usually met with in young women who give a long history of the symptom but are nevertheless well-nourished and fairly active. Organic lesions should of course be eliminated. Treatment consists in suggestion, general tonic measures, and the passing of bougies.

(2) Reflex spasm. I have described one of my cases at a previous meeting: a young man who suffered from almost complete inability to swallow, for a period of nineteen days, was found to have Pott's disease of the dorsal vertebræ; he was put on Bellergal by which, he could swallow solids three days after; but eventually, he died of the spinal lesion, which was not treated. Aortic disease can originate reflex dysphagia, and intestinal worms have been cited as a cause.

In the *Plummer-Vinson Syndrome*, consisting of stomatitis, glossitis, atrophic pharyngitis, dysphagia and secondary anæmia, the difficulty in swallowing is probably due to hypo-æsthesia of the pharynx and consequent absence of relaxation (achalasia) of the mouth of the gullet when the bolus of food reaches it. *Cardiospasm* is considered to be the result of achalasia of the lower end of the œsophagus. What part reflexes play in the production of these two conditions is a matter for conjecture and research work.

Coming to the group II of disorders, we find that the nose is the great originator of symptoms and syndromes in neighbouring or remote regions.

I. **Headache.**—I regard rhinogenous headaches as being divisible into four clinical varieties:

1. *Congestive headache* due to mechanical, inflammatory or œdematous occlusion of the ostia of one or more of the paranasal sinuses, resulting in rarefaction of air in the sinuses and dilatation of vessels in the submucosal layer of their walls. We thus have the 'vacuo-frontal headache' of Sluder, and what may similarly be termed the 'vacuo-maxillary face-ache' in suppuration in the antrum of Highmore.

2. *Toxic headache* due to septic absorption from infected sinuses, comparable with a toxic headache from any other septic focus.

3. *True reflex headache* due to irritation of any area of the nasal mucosa by septal deviations or spurs, enlarged turbinals, etc. This headache should properly be termed '*Sphenopalatine ganglion neuralgia*' or '*Vidian neuralgia*.' The sensory impulses from the nose pass through the sphenopalatine ganglion to the Gasserian ganglion, which supplies twigs to the dura-mater; or, alternatively, we may trace the impulses through the sphenopalatine ganglion, along the Vidian nerve and its component nerves, to the ninth and tenth nuclei and to the cervical sympathetic ganglia. The syndrome of the sphenopalatine ganglion consists of: a 'lower half' headache involving the root of the nose, the eye and the zygomatic region, radiating to the ear, mastoid region, occiput, and even to the neck and shoulder; and sympathetic phenomena, such as sneezing, watery nasal discharge, redness of the eyes, dilated pupils, and photophobia. The treatment of this type consists in removal of the cause.

4. *The 'habit headache'*—I have observed in several cases that even after removal of the cause of reflex rhinogenous headaches, the symptom persists in a milder form. I would suggest that in such cases the sphenopalatine ganglion has acquired the habit of sending sensory impulses on the slightest provocation, say, a change in the temperature or humidity of the inspired air. Cocainisation of the ganglion (which lies immediately behind the posterior end of the middle meatus), and the administration of Bellergal, serve to break off the headache habit.

II. **Asthma.**—Reflex nasal asthma is an unquestionable entity, though its incidence has been variously estimated. The 'asthmagenic area' of the nose (Adam) or the so-called 'trigger-area' of Haseltine includes the postero-superior part of the nasal septum, the middle turbinal and the sphenoid area. The nerve path is along the branches of the fifth nerve to its nucleus, thence through its descending root to the nucleus of the tenth, and so to the bronchioles. FRANCIS advocates his 'stroking method' of galvano-cauterisation of the tubercle of the septum in all cases of asthma. In his series of 600 cases so treated, there was a complete cure in 60% and improvement in 27%. The

most hopeful cases for this treatment are those with no family history of allergy, in whom nasal symptoms constantly precede asthmatic attacks, and the attacks can be aborted or relieved by cocainisation of the nasal mucosa. SIR ST. CLAIR THOMSON declares that "every asthmatic patient should have his nose examined."

III. **Dysmenorrhœa.**—FLIESS in 1895 first described 'nasal dysmenorrhœa' which he cured by cauterising small areas on the tubercle of the septum and the inferior turbinal; these areas he called the 'genital zone'. Most authorities are of opinion that there is a reflex action between the nose and the reproductive organs. I have had no personal experience of such cases.

IV. **Nocturnal enuresis.**—I think very few laryngologists now believe that removal of adenoids can cure the habit of bed-wetting in children.

V. **Eye affections.**—Rhinogenous eye affections, quite apart from sinusitis, have frequently been reported. BORRIES of Copenhagen, in a paper read before the Royal Society of Medicine in 1936, described a case of his, a woman who had been troubled for eighteen months with a conjunctivitis on the left side; he resected the inferior turbinate and just when he had completed the operation, the patient declared that she experienced a sensation as if a stone had been removed from her eye; the conjunctiva acquired its normal colour the following day, and the patient remained permanently cured.

VI. Cardiac neuroses, epilepsy, stammering, and other disorders have from time to time been ascribed to nasal reflexes.

In conclusion, I would like to emphasize the fact that we are certain to encounter numerous difficulties and fallacies in the diagnosis and care of functional and reflex disorders. The constant realisation of this liability will help us to investigate our cases carefully and to treat them scientifically, and may perhaps enable us to contribute something towards the solution of the mystery which still surrounds the subject of these disorders. In the words of MR. HERBERT TILLEY, the eminent London laryngologist, "the whole danger lies in the too enthusiastic application of a theory which, though of inestimable value in a certain proportion of cases, is yet liable to gross abuse and productive of disastrous results when hastily invoked as the *probable* cause of symptoms in near or remote organs."

Discussion.

(After the paper was read on 17th November, 1939.)

Dr. G. P. Rayen spoke about the applicability of Lombard's test in diagnosing and treating cases of *Functional Aphonia.*

He said, "It is not my purpose here to speak about the characteristic history, onset, and clinical picture of functional aphonia, so well known to all of you and so vividly described in text-books of Laryngology. I desire to impress on you how Lombard's test which is commonly used to detect unilateral feigned deafness could be employed to diagnose and treat cases of functional aphonia. The test is simple and can be easily carried out. Since I first came to know of its application in functional aphonia from MR. N. ASHERSON of The Central London Throat, Nose and Ear Hospital, I have had uniform success in every case I have come across, and I would request you to try this test in cases of functional aphonia before having recourse to more drastic methods like faradisation."

"The test depends on the fact that a man must hear his own voice in order to regulate its tone and intensity. A person hears by air or bone conduction. He hears the speech of others by air conduction, whilst he hears his own voice by bone conduction. Hence he regulates his voice according to the acuity of his bone conduction. If his bone conduction is considerably diminished, as in bilateral nerve deafness, he speaks in a loud tone. But if his bone conduction is relatively increased as in otosclerosis, he intonates softly. A person can be temporarily placed in the position of a nerve deaf, by preventing him from hearing his own voice. This is accomplished experimentally by occupying his ears with two Barary's noise boxes or less expensively by rubbing two pieces of crisp paper against his ears. If a normal person is asked to read aloud in his natural voice and if his ears are occupied by one of the above mentioned methods, he raises his voice immediately and maintains it as long as his ears are occupied. He is unaware of the fact that he has raised his voice which reverts to normal as soon as the noise is stopped."

"In functional aphonia, after excluding all organic lesions, confirmation can be obtained by applying this test. The patient, usually a woman, is seated on a chair and asked to read aloud from a paper continuously and not to stop reading while the noise box is set in action. An illiterate is asked to keep on repeating a simple sentence. In one case, I instructed a woman to repeat "I will not come to the hospital tomorrow." In such a sentence there is also an element of suggestion. While the patient is reading, the examiner stands behind her and occupies both her ears simultaneously with an extraneous noise by rubbing two pieces of paper against the ears. After a short latent interval, the patient raises her voice and speaks normally without being aware of it."

"During the experiment, it is advisable to have one or two of the patient's relatives near by, to convince her that she has regained her voice and to keep her engaged in conversation after she leaves the consulting room. Otherwise, she usually reverts to her original whisper. The sudden recovery of the voice confirms the cause as being functional and not organic. In my experience, one application of this test has been sufficient to "cure" the cases. But if the patient relapses to her original state, the test may be applied daily for a few minutes. The patient herself becomes conscious of the fact that she has regained her normal voice and soon relearns the art of holding the vocal cords at the proper tension for normal speech."

Dr. N. Srinivasan said that two patients whose tonsils he had removed for other symptoms, were cured of their uterine disorder after the operation.

Dr. M. Sanjiva Rao described a case in whom an amenorrhœa of long duration had been apparently cured by a tonsillectomy, though he had performed the operation for other reasons.

Dr. Thampi reported a case of chronic rhinitis, a man of 31 years, in whom a cauterisation of the inferior turbinates was immediately followed by the cessation of an obstinate conjunctivitis from which he had suffered for ten years despite treatment by various eye specialists.

Dr. J. Jacob related the details of a case of bronchial asthma in whom a permanent cure was brought about by cauterisation of the tubercle of the septum.

Dr. P. V. Cherian observed that he was impressed by the therapeutic use of Lombard's test, and said that this test was worth a trial in the treatment of functional aphonia, although he himself never had any failures with the Faradic current.

Treatment of Skin Diseases in General*

BY

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It is a common misconception that the treatment of skin affections is merely symptomatic. This idea is as erroneous as it is with regard to the treatmant of any other disease. The fact is that as long as a disease is undiagnosed, the treatment has perforce to be symptomatic. It must also be admitted that many of the skin disorders, just as in many other diseases, are yet unexplored and the causation thereof is yet obscure, and necessarily the treatment of such disorders is still unsatisfactory, vague and suited to the mere symptoms. As the science of healing is advancing, more and more knowledge has been gained and the ideas pertaining to such unknown diseases as well as the remedies for bringing about their cure are coming to light.

An example of symptomatic treatment may be illustrated as follows. As it is very often seen, a case of scabies which is secondarily infected, is treated with antiseptics like Acriflavine and Mercurochrome and to boot, various injections are also advised. These measures only help in bringing down the secondary sepsis but the underlying scabetic condition remains the same. The patient, therefore does not get rid of his original complaint unless and until the scabies in the whole family is treated. So also in urticaria any amount of antipruritic lotions and powders will not help in eradicating this disease until the cause of urticaria is discovered and treated. The fault may be the patient's food or it may be some disorder of the intestines, or in any of the septic foci like the teeth or the tonsils. That cause must be investigated and treated in order to prevent frequent relapses of the complaint which make the confusion of the patient as well as the physician more comfounded than ever.

Now to come to the treatment of skin diseases, it is chiefly divided into 2 classes, External and Internal.

The EXTERNAL TREATMENT consists of baths, fomentations, poultices, lotions, ointments, etc. Ultra-Violet rays, Deep X-rays, and Carbon Dioxide Snow are other modern devices for treating those cases which are not amenable to the simpler remedies.

The *baths* are prescribed to cleanse the body, and the ingredients of a bath are mild antiseptics or soothing remedies dissolved in warm water as is required in a particular case. As for instance, a Sulphur bath consisting of 2 to 4 ounces of sublimed sulphur in a tubful of warm water is used in a case of scabies before the inunction of a Sulphur ointment. An alkaline bath consisting of 2—5 ounces of Soda Bicarb to a tubful of warm water is advised in a case of psoriasis as it helps to remove the scales. A starch or a bran bath is advised in

* Specially contributed to 'The Antiseptic'.

a case of arsenical dermatitis as it is soothing to the irritated skin. The baths, therefore, have a threefold influence on the skin, namely disinfection, a soothing effect and thirdly they make it fit to absorb the medicament *e.g.*, a Sulphur ointment in scabies or a Sulphur and Salicylic ointment in psoriasis.

Fomentations are useful in inflammatory conditions or where there is pus. Generally, Boric Acid is used to prepare a mild antiseptic lotion for fomenting the part. Fomentations, though they seem trivial, are of immense benefit. It often proves useless to prescribe a high-sounding ointment to be applied over pustules, if previously the pus has not been evacuated and hot fomentations are put on morning and evening. It may also be added that a greasy ointment is by far the most unsuitable in pustular affections, and it is much more clean and simple to prescribe a mild, antiseptic lotion *e.g.*, Lotio Acraflavine 1 in 1000 to be used as a compress on pieces of sterile gauze. One is too frequently reminded of the fact that wherever the instructions as to the use of fomentations are not implicitly followed, the patient presents an increased crop of eruptions at the second visit which is more sudden than otherwise anticipated, and the patient, surprisingly enough, indicts the ointment for it. Such a miserable plight of the patient can only be avoided by stressing on him the importance of fomentations.

Poultices are intended to remove adherent crusts as in impetigo contagiosa. Commonly, a poultice is prepared by mixing a teaspoonful of Boric Acid and an ounce of Starch powder with a little warm water. Then hot water is slowly added to it to make a semi-solid mass which is to be applied thickly on a sheet of lint and tied of the affected part overnight. The next morning the crusts can be removed easily and the prescribed dressing put on *e.g.* a Mercurial ointment for impetigo. The patients very often fail to remove the crusts and are in the habit of applying the ointment on the top of them, which procedure fails to bring about the desired cure. It is, therefore, absolutely necessary to impress upon the patient's mind the necessity of removing the crusts and the technique of preparing and applying a poultice. It is also necessary to warn him of the attendant failure in not removing the crusts, as the medicament does not reach the site of disease which lies undereath the crusts.

A *lotion* forms one of the chief items at the command of a physician in treating various affections of the skin, particularly when the disease is located on the superficial layers of the skin and the deeper structures are not affected. The most popular of all the lotions is the Lotio Calaminæ :—

℞	Zinci Oxidi	...	ʒ iii.
	Calaminæ Preparatæ	...	ʒ iii.
	Liqr. Calcis	...	ʒ vi.
	Aqua Rosæ ad	...	℥ vi.

Mft. Lotio for external use.

It is cooling and drying to the parts when there is irritation and oozing as in a case of acute eczema. Addition of Liqr. Plumbi has a more drying effect. With the addition of Sulphur Precipitate or Pot. Sulphurata, the Calamine lotion is prescribed in acne rosacea or seborrhœic dermatitis of the body *e.g.*

℞	Zinci Oxidi	... 3 iii.
	Calamine Preparata	... 3 iii.
	Pot. Sulphurata	... 3 ii.
	or	
	Sulphur Precipitate	... 3 ii.
	Ol. Lavandulæ	... 3 p.
	Aqua ad	... ʒ vi.

Mft. lotion for external use.

Equal parts of Liqr. Calcis and olive, linseed or cocoanut oil with the other components such as Zinc Oxide and Calamine Preparata to which antipruritics like Phenol, Camphor, Menthol or Liqr Carbonis Detergens are added, makes an excellent liniment wherever a soothing, emollient and antipruritic action is indicated as in a case of dry eczema, *e.g.*:—

℞	Zinci Oxidi	... 3 iii.
	Calamine Preparata	... 3 iii.
	Phenol	... 3 p.
	Camphor	... 3 p.
	Olive oil	... ʒ iii.
	Liqr. Calcis	... ʒ iii.

Mft. liniment for external use.

The bottle of the liniment must be shaken well and the contents poured into a saucer from which the liniment must be taken by means of a piece of gauze and dabbed on to the parts every hour or two. The part may also be covered with a piece of gauze soaked in the liniment.

Lotions containing Acriflavine and Mercurochrome are well-known for their antiseptic effects and are more popular in the domain of surgery, and are equally useful in dermatology when there is pus or sepsis.

Ointments are made up of powders like Zinc Oxide and Pulv Amyli with other ingredients like Hydrarg, Ammoniatum, Acid Salicylic or Benzoic mixed in a vaseline base. An ointment is useful when the condition is sub-acute or chronic and when there is no acute inflammation and redness. It is, therefore, advised in cases of sub-acute or chronic eczema, ringworm, psoriasis, ichthyosis, etc., *e.g.*:—

℞	Liqr. Picis Carbonis	... m v.
	Zinci Oxidi	... 3 i.
	Pulv Amyli	... 3 i.
	Vaselini Alba	... 3 iv.

Mft. ungt. for chronic eczema.

℞	Acid Salicylic	... gr. x.
	Acid Benzoic	... gr. x.
	Vaseline alba	... 3 iv.

Mft. Ungt. for Ringworm.

℞	Acid Salicylic	... gr. xv.
	Sulphur Precipitate	... gr. xv.
	Ol. Cadini	... 3 p.
	Vaseline alba	... 3 iv.

Mft. Ungt. for psoriasis to be rubbed well into the lesions after removing the scales by means of a hot alkaline bath.

℞	Balsam Peru.	... 3 i.
	Sulphur Sublimatum	... 3 i.
	Vaseline alba	... ʒ i.

Mft. Ungt. for scabies to be rubbed well into the skin below the neck all over the body for 3 successive nights after a hot bath and the two following mornings (in all 5 applications). On the 4th day after the morning bath the patient is advised to change all his clothes including the bed-linen and boil them. The patient must be warned not to continue the application of the Sulphur ointment for more than 3 days for fear of developing sulphur dermatitis. Weaker strengths of the ointments must be prescribed for children according to age, and all the members of the family or the institution must be treated simultaneously to prevent reinfection from the carriers of infection to others.

In addition to the above mentioned applications there are other preparations which are effective in their own way *e. g.*:—

℞	Acid Salicylic	... gr. x.
	Camphor	.. gr. xx.
	Zinc Oxidi	... 3 ii.
	Acid Boric	... 3 ii
	Pulv. Talci ad.	... ʒ i

Mft. Pulvis for dusting on the body for prickly heat and intertrigo.

℞	Zinci Oxidi	... 3 i
	Calamine Preparata	... 3 i
	Olive oil	... 3 p.
	Liq. Calcis	... 3 p.
	Lanoline	... 3 i
	Vaseline alba	... 3 iv

Mft. Cremor for healing raw surfaces.

℞	Gentian Violet	... gr. x
	Brilliant Green	... gr. v
	Spirit Rectificati	... 3 i
	Aqua ad.	... ʒ i

Mft. Pigmentum for streptococcal and fungoid infections.

Ultra-Violet rays, Deep X-rays and Carbon Dioxide snow are other modern sources which are safe in the hands of an expert and are useful in growths and other chronic affections which are beyond the scope of simple remedies.

Internal Treatment.—As regards the internal treatment the bowels have to be first seen to and mild aperients should be advised in case there is constipation. The diet should be a lacto-vegetarian one consisting of plenty of fruits. Chillies, pungent things, and excessive starchy food should be restricted. Alcohol, tea, coffee and smoking should be prohibited. In a poorly nourished patient, tonics like Iron, Arsenic and Cod liver oil serve well the purpose of enhancing the recuperative powers.

Amongst useful drugs may be mentioned the following:—Arsenic which is not only a tonic but almost a specific in syphilis and pemphigus; Mercury in lichen planus; Calcium Lactate still holds its sway in the treatment of urticaria. The Salicylates are highly recommended in psoriasis and erythema nodosum. Small doses of Thyroid extract are found useful in ichthyosis. Calcium Sulphide gr. ¼ t.d.s. is advised by WALKER in acne and furunculosis. Sodium Hyposulphite gr. 5 to 10 t.d.s. is advised by DUHRING in urticaria and furunculosis. In urticaria WALKER also recommends Ichthyol m. v to x in Glycerine or in capsules t.d.s. In all cases, drugging should not be carried to an extreme, and their administration must depend on the power of resistance of the patient.

In these days there is no end to the pharmacopia of injections. Calcium Gluconate and Sodium Thiosulphate and autohæmo-therapy prove efficacious in urticaria and allergic dermatitis. Manganese injections are valuable in staphylococcal infections. Milk is useful in eczema and other dermatoses. Gold injections are highly recommended in lupus, and Hydnocreol in leprosy. Iron, Arsenic and Liver Extract are of course used to enrich the blood. Vaccines and Sera are useful in strepto and staphylococcal affections, but they must be given cautiously so as to avoid severe reactions.

Lastly, it may be remembered that the success in treatment lies chiefly in finding out the local as well as the general cause of the disease, rather than in experimenting with various drugs and injections.

The gateways of infection such as the nasal passages, the throat, teeth, appendix, and the intestinal canal must be investigated and every source of infection should be attacked. Hopes must never be given up however chronic a case may be, and the treatment based on scientific lines should be persisted in until complete recovery is established.

Malarial Enteritis*

BY

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Ætiology.—This condition may be looked upon as a complication of malarial fever. Occurs mostly during epidemics of malaria or in malarial patients who are constantly subjected to malaria.

Males and females are equally prone to this disease, but it is rare in children, and subjects with anæmia and enlarged spleens are readily susceptible. Death rate is also higher in weak individuals with enlarged spleens and anæmia. Following is the summary of 20 cases treated by the writer.

1. 67; male; œdema of legs; anky. ova abundant in the stools; weak; died after 20 days in the hospital.

2. 40; male; abdominal pain; tenesmus; no temperature; spleen enlarged; cured after 8 days in the hospital.

3. 32; male; temperature ranging from 99° to 102°; B. T. parasites present; cured after 13 days in hospital.

4. 28; male; no temperature; cured after 16 days in hospital.

5. 31; male; temperature keeping up between 99° and 101° for a period of one week; no M. P. in blood found; spleen enlarged to 5 times the normal; cured after 21 days in hospital.

6. 28; male; temperature continuing between 99° and 102° for one week; B. T. parasites found in blood films; weak; spleen enlarged to 4 times the normal; tenesmus; cured after 40 days in hospital.

7. 22; male; temperature continued between 99° and 101° for 5 days; spleen enlarged to twice the normal; cured in 6 days in hospital.

8. 18; male; liver enlarged; anæmia marked; toxic; spleen enlarged to five times the normal; tenderness over liver; died on the same day of admission to hospital.

9. 28; male; temperature continued for a period of one week between 99° and 101°; nausea and vomiting; B. T. parasites found in blood film; died after 15 days of admission to hospital.

10. 45; male; no temperature; no parasites found; died after 11 days in hospital.

11. 18; male; no temperature; no parasites found; slight abdominal distension; cured after 7 days in hospital.

12. 24; female; spleen enlarged to 5 times the normal; temperature for 4 days between 99° and 101°; no parasites found in blood films; cured after 15 days in hospital.

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* Specially contributed to "The Antiseptic".

13. 18; female; no temperature: no parasites found in blood films; cured after 13 days in hospital.

14. 30; female; temperature for 5 days; M. T. parasites found in the blood film; cured after 16 days in hospital.

15. 20; male; no temperature; no parasites found in blood film; cured after 8 days in hospital.

16. 35; female; no temperature; no parasites; cured after 20 days in hospital.

17. 25; male; spleen enlarged to 6 times the normal; temperature for 5 days ranging between 99° and 101°; cured after 28 days in hospital.

18. 6[illegible]; male; aged and feeble; toxic; no temperature; no parasites; died after 7 days in hospital.

19. 65; male; debility marked and weak; temperature ranging between 99° and 101° for 4 days; no parasites found in the blood films; died after 8 days in hospital.

20. 45; male; delirium marked; toxic; temperature ranging between 101° and 102°; restless; died after 4 days of admission to hospital.

Clinical Varieties.—The writer came across two definite varieties of malarial enteritis in two entirely different and distant areas in Ceylon. At Alutnuwara, a District highly malarial, cases of a different type to what was observed at Walasmulla by the writer were observed. Alutnuwara cases were toxic, and all cases were passing cholera-like stools, having no blood in stools whereas in all the above quoted 20 cases, the patients were passing blood, mucus and pus. In not a single case at Alutnuwara was blood passed in the stools. Vomiting was a marked feature in all the Alutnuwara cases whereas vomiting was a rare symptom in Walasmulla cases. Walasmulla cases took a very long time for their cure but the cases at Alutnuwara were bad to start with, but once the collapsed state, which was very predominant in these cases, was tackled suitably, they made a rapid recovery.

Stools.—Very offensive in all cases at Walasmulla but not offensive in all cases at Alutnuwara. Blood, flakes of mucus and a greenish coloured scum on allowing it to remain were characteristic in all Walasmulla cases. Amœbæ were never found in stools under the microscope in all cases. Pus cells were plenty in all cases at Walasmulla.

Clinical Picture.—*Alutnuwara cases*:—Patients were collapsed on admission and had no temperature, cholera-like stools of the typical rice-water type. Vomiting was a marked symptom.

Walasmulla cases:—Patients were practically never collapsed, vomiting was rare, stools contained blood, pus and mucus. No amœba, blood films for M. P. showed parasites in some cases. Protracted period of cure.

Complications.—Vomiting, collapse, tenderness and rigidity of the abdomen, delirium and restlessness. These are all the symptoms in cases that ended in death.

Post-Mortem Appearances.—The intestinal walls were often gangrenous and the lumen contained pus and mucus in abundance.

Prognosis.—In cases with none of the complications mentioned above, recovery was possible. The course of the disease, however, is protracted and leaves the patient terribly weak after the illness.

Diagnosis.—It is important to distiguish between this condition and acute amœbic dystentery. The absence of amœbæ will help in this and also the nature of the District, whether malarial or not.

Treatment.—It is very important to exclude amœbic dysentery. The giving of Emetine to all cases of patients passing blood and mucus without examining the stools for amœbæ, I think, is criminal. Emetine is a very depressing drug and should only be given in cases when the diagnosis of amœbic dysentery is quite sure. As a routine, I prescribe the folowing mixture.

℞ Sodi. Sulph Mag. Sulph	}	āā	...	ʒ 2
Tinct. Card. co. Tinct. Zingiberis	}	āā	...	♏ 10
Aqua Chloroformi ad			...	ʒ 1

Oz. 1 every 2 hrs. This mixture is given till the stools are cleared of flakes of mucus and till the stools are made clear. After sometime the dosage could be reduced to 3 or 4 times a day instead.

When there are signs of stools clearing up, I preseribe:

Bismuth carb Salol	}	āā	...	grs. 10 t. i. d.

The question of dieting is a very important factor in all these cases. Till the stools are formed, I only allow as diet malted milk, arrowroot congee, poree congee, a little coffee occasionally, plenty of Glucose-water for thirst, lime juice or orange juice, and albumin water. Milk is best avoided.

When the motions are satisfactory—and only then—such items like toast, half or quarter boiled eggs are allowed. After a few days of the formation of the stools, a little chicken soup may be allowed and when the patient is fit, gradually custard and sago puddings are allowed and the diet has to be gradually built up without upsetting the stomach of the patient. Papaw fruit is good after the stools are formed and this should be quite ripe; and for children pomegranate juice is also very good. A beli fruit in the mornings is quite good.

When vomiting is a marked symptom, one should be very careful regarding the diet, all liquids in such cases are best given iced and

ice should be given to suck liberally and also plenty of Glucose water by mouth.

In cases with vomiting, give 10 mm. of Adrenalin every fourth hour in ice till the vomiting ceases. Even an injection of Adrenalin in persistent cases does very well.

In cases with tenesmus, Starch and Opium enema should be given. Quinoxyl is a very useful drug in cases after the stools are cleared of mucus. One should never omit the main and routine treatment for malaria itself during the course of the disease. A few doses of Quinine by mouth where it could be so given and in cases with vomiting and temperature, even an injection of Quinine will have to be given. In two cases where the temperature was continuing, I gave Atebrin by mouth with good results. In all cases where Atebrin is being given, plenty of barley water should be given. If the patient is collapsed, adequate treatment for this condition should be given and even if necessary, Saline and Glucose subcutaneously or even intravenously in desperate cases of collapse.

Treatment of Eclampsia for Mofussil Practitioners*

BY

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Definition.—Eclampsia is a serious form of acute toxæmia of pregnancy characterised mainly, clinically, by convulsions with often loss of consciousness occurring before, during or after parturition with albuminuria and pathologically, by marked changes in the liver and kidney.

I do not like to increase the bulk of my paper by giving in detail the clinical symptoms, pathological changes and diagnosis of the disease but I wish to touch the bare points merely to recapitulate them.

Clinical Varieties.—It is an acute toxæmia generally occurring in later months of pregnancy, during or after labour and primigravidæ are more liable to the disorder. It may be antepartum, intrapartum and postpartum and of these the first two have been described in the text books to be the most common ; but in practice I have got more cases after delivery and this is probably due to other varieties going to Hospital for obstetrical interference.

Causation.—Many hypotheses have been put forward concerning the etiology of the disease but exact knowledge is still lacking. The origin of the disease is said to be :

* Specially contributed to 'The Antiseptic'.

1. *Maternal* :—due to disturbance of the maternal metabolism and the following theories have been brought forward.—(i) Intestinal toxæmia. (ii) Presence of Sarcolactic Acid - in this condition the acid has been demonstrated in cerebrospinal fluid and urine. (iii) Thyroid insufficiency. (iv) Disturbance in the secretion of choroidal plexus. (v) Auto-intoxication with marked disturbance of protein metabolism.

2. *Fœtal*:—due to—(i) the marked proliferation of the coverings of chorionic villi. (ii) Insufficient production of Syncytiolysine.(iii) Over-production of Syncytiolysine. (iv) Non-production of Anti-syncytio-toxin. (v) Due to passage of ferments and autolytic products from the placenta into the maternal circulation.

It should be noted that lesions similar to those of eclampsia are found in the liver and kidney of patients who die from the result of snake bite and the poison in this instance contains hæmolytic and agglutinative toxin.

"In summing up the etiology of eclampsia" WILLIAMS says: "it is evident that its cause is still undiscovered. All that we know positively is that the disease is accompanied by characteristic lesions in the liver and by striking changes in metabolism. Our clinical experience leads us to believe that it is dependent upon a profound toxæmia, but we are as yet ignorant whether the changes originate in the maternal, or fœtal organism or in both".

Clinical History and Symptoms.—The patient is usually a primigravida and may during the earlier months have suffered from hyperemesis gravidarum. During the later months, generally about the seventh month, she may seek advice for head-ache, vomiting, puffiness of the eyelids and œdema of the legs and the urine is found to contain marked albumin. If she does not recover she is liable to get the disorder.

It should be clearly noted that eclamptic convulsion may occur without warning symptoms and instances are not rare in which convulsions are absent in eclampsia.

Symptoms are—Convulsion with or without loss of consciousness, fever, œdema of legs, pulse is generally full and bounding. The blood pressure is increased and the amount of urine is invariably diminished and it often may be suppressed.

Complications.—May bite her tongue and bleed, suffocation, secondary bronchopneumonia from septic absorption, unconsciousness, mental derangement, partial detachment of retina, hemianopsia, jaundice.

Untoward Symptoms.—1. Recurrence of fits at short intervals. 2. Deep coma. 3. Suppression or diminished quantity of urine. 4. Frequency of pulse with high blood pressure. 5. High temperature. 6. Jaundice.

Immediate Causes of Death.—Asphyxia, œdema of the lungs, apoplexy, gradually deepening coma, aspiration pneumonia and puerperal infection.

Pathological changes.—The most characteristic changes are in the liver, kidneys and urine.

Liver:—In the liver we get all the changs of characteristic hæmorrhagic lesions. These consist of irregularly shaped, reddish or whitish areas scattered through the entire organ and originating near the smaller portal vessels. They are readily seen with naked eye and on section give the liver a mottled appearance. Microscopically they are recognised as areas of necroses, involving the periphery of the individual lobules and the portal spaces in which blood cells may or may not be present. Their formation has been attributed to the degenerative changes following thrombotic procosses in the smaller portal vessels.

Kidneys:—They are usually enlarged and the lesions are usually those of acute nephritis with marked degeneration and necrosis of the epithelium of the convoluted tubules.

Thrombotic, hæmorrhagic and necrotic changes are also found in brain, heart and spleen.

Urine:—The amount is invariably diminished and may be suppressed. Various types of casts and blood are nearly always present. The total amount of nitrogen and the amount of urea in urine is much reduced. The ammonia-cœfficient shows a high figure. The amount of chlorides is diminished and acetone and diacetic acid as a rule are present, but they may be absent.

Diagnosis.—Is not very difficult to differentiate from hysteria, tetanus, cerebral malaria, acute apical pneumonia,uræmia, epilepsy, acute yellow atrophy of the liver.

Prognosis.—The prognosis is always serious and considered to be more gloomy in anti-partum and intra-partum varieties than in post partum variety by some authorities but recent statistics indicate that post partum eclampsia is quite as serious.

Termination.—Antepartum eclampsia may terminate in (a) rapid onset of labour, (b) death without delivery, (c) recovery without delivery. She may expel a dead fœtus at a later date but sometimes a living child at term.

In intrapartum variety—uterine contractions are increased and delivery is hastened.

Post-partum variety generally occurs within 48 hours, convulsions may succeed each other rapidly. She may recover or death may follow. The maternal mortality is said to be 25 per cent.

Treatment.—1. *Prophylactic*:—Antenatal-supervision—special attention to the periodical examination of urine, in later months of pregnancy—specially in primigravidæ, and immediate institution of proper treatment and diet as soon as toxic symptoms appear indicating defective elimination.

2. *Curative*:—General:—The patient is generally in bed. She should be kept there and further external stimuli should be removed. She should be kept in a dark,clean and well-ventilated room. Plenty of fluids should be given.

I. **Medicinal.**—(1) To combat fits—sedative drugs - Morphine with or without Atropine,Bromides, Chloral Hydras, Hyoscine Hydro-Bromide, Chloroform, Ether.

(2) To combat toxæmia.—(*a*) Alkalines, Glucose, plenty of fluids, barley water, imperial drink, rectal infusion etc. (*b*) Bowel to be opened—Mag. Sulph, Jalap, Castor oil, Croton oil, rectal wash. (*c*) Skin—hot bath, packing etc., to encourage sweating.

(3) To maintain heart—Glucose, Atropine, Digitalis, Cardiozol etc.

II. Obstetrical Interference.

III. Surgical Interference.

IV. Dietetic.

It should be clearly noted that as the patient is in convulsion and unconscious in most of the cases, nothing should be given by mouth except through a nasal or œsophageal tube for fear of suffocation or aspiration pneumonia.

Treatment of Convulsions:—As in general treatment. The head of the patient should be turned on to one side gently and a gag must be placed between her teeth, cold application to head including ice and hot application to lower extremities. Free purgation or rectal wash with normal Saline or Calcium Permanganate ½ per cent. Morphine ¼ to ½ gr. with 1 tab of Atropine 1/100-1/60 gr. to be injected hypodermically immediately the patient is seen if she has not got any before and a second dose of ¼ gr. of Morphine alone to be repeated after 2 hours if the patient is not under the influence of the drug. The fits should be kept under control for 24 hours with sedative drugs.

Chloroform has been advocated but personally I am not in favour of its use on account of the deleterious effect of the drug on the liver which is already damaged. Ether is much better than Chloroform.

Bromides and Chloral Hydras can be given orally or with rectal infusion.

Sodium Chloride should not be used if there be œdema of legs etc., as there are retention of Chlorides in these cases. The following rectal infusion may be used :—

℞	Sodi. Bicarb	...	gr. 160
	Pulv. Glucose	...	℥ 1
	Pot. Bromide	...	ʒ 1
	Chloral Hydras	...	ʒ 1
	Aqua ad.	...pint.	1

Mft. infusio, 5 ounces to be given rectally every 4 hours as directed.

Sodium Chloride gr. 90 may be added to the infusion s.o.s.

As soon as the patient regains consciousness fluids should be forced and she should be encouraged to drink plenty of it to help in dilution and elimination of toxins, and the alkaline mixtures should be given orally with sedatives if necessary.

To combat toxæmia and prevent acidosis, alkaline infusion as stated above and alkaline mixture to be freely given as below :—

℞	Sodium Citras	...	gr. 20
	Sodium Bicarb	..	gr. 20
	Pulv. Glucose	...	ʒ 1
	Mag. Sulph	...	ʒ 1
	Syr. Auranti	...	ʒ ½
	Aqua ad.	...	℥ 1

Mft. Mist dose 1, send 4 such ; one dose every 4 hours.

Pot. Bromide or Chloral Hydras may be added if necessary.

Glucose-12½ per cent. intramuscularly or 25 per cent. intravenously should be given. If there are repeated convulsions glucose may profitably be injected intramuscularly in gluteal region. Dose 25-50 c.c.

Calcium has been advocated by many but I do not personally use the same so long as the blood pressure is high. It is good, indeed, when the pressure is low and pulse is weak and rapid. Preparations used, Collosol Calcium (Crookes) and Calcium Gluconate (Sandoz).

Venesection.—If there be no control of fits within 24 hours with the above line of conservative treatment and there be persistence of increased blood pressure, 4 to 8 ounces of blood-letting from an Indian patient is a useful remedy, though more is recommended by European authorities. This is repeated if necessary; some of the persistent cases respond very well to venesection. It lowers blood pressure, some of the toxin is withdrawn with the blood and œdema of legs and of lungs are definitely improved.

According to WILLIAMS, "best results are obtained when free venesection precedes all other forms of treatment." He advocates withdrawal of 600 to 1000 c.c. of blood as soon as fits occur, irrespective of the condition of the pulse. He says: "In a considerable proportion of cases this may be all that is necessary, as further convulsions do not occur, the blood pressure falls and the urine increases in amount and shows all of the changes which were formerly associated with a successful issue following immediate delivery. In cases of this sort, the patient makes a complete objective recovery and falls into labour spontaneously somedays or a week later."

Unfortunately such results occur only in a minority of cases, so that if prompt improvement does not follow venesection, delivery should be effected as soon as is consistent with the safety of the patient.

Obstetrical Interference.—It should be undertaken if the fit continued after the consecutive two injections of Morphine as already stated, if it is not controlled with injections of Glucose and rectal infusion with sedatives or by venesection. For a mofussil practitioner, where a medical attendant is not a competent operator, the Cæsarean section (abdominal or vaginal) is out of the question. For them, it is better to dilate the cervix and extract the child by forceps, version or craniotomy after taking all necessary antiseptic precautions.

There is a great danger of infection ; careful aseptic precautions should therefore be taken.

Patients may develop puerperal insanity after eclampsia, so good sleep should be induced by sedative drugs, if necessary.

Other treatments advocated. (1) Thyroid—to counteract the secretion 10 grns. thrice daily. No special benefit. The drug is used with the idea that there is deficient secretion of thyroid.

(2) Veratrum Viride—for vasodilatation and diuretic effects. 15 minims of Tincture every half an hour till pulse is 60 is usually given. Veratrone 1 c.c. by injection—risky for its depressant action on heart.

Surgical.—*Lumbar puncure*:—not of special value though there is definite increased pressure inside the canal.

Spinal anæsthesia :—Not of much value.

Decapsulation of kidneys :—To relieve the internal tension in cases of suppression of urine.

Dietetics.—Milk, barley water, plenty of fluid, milk of green cocoanut, protein diet—specially animal protein—should be strictly avoided during the disorder.

CASE No. 1.—A.—H. F. (Sister-in-law of H. G. R.), aged 16 years, primipara and was nearing the term. I saw the case about 18 hours after the onset of the disease and found her unconscious, convulsions occurring at intervals with no return of consciousness, pulse low, weak and rapid, temperature 101.8°. Morphine hypodermically and Magsulph intramuscularly were given without tangible benefit. On examination, I found the fœtal head was in the perineum. After taking necessary antiseptic precaution, the dead fœtus was taken out by low forceps. Glucose was injected and the patient was left for the night. She gradually improved, and regained consciousness. Convulsion stopped and she came round with the above line of treatment without further use of sedatives.

CASE No. 2.—J. Dasi, Hindu female, aged 16 years, primipara—I was called in to see the case on 4-9-38 about 2½ hours after the birth of the child. She developed convulsion two hours after delivery. No history of such attacks previously. She was having typical eclamptic fits with short intervals, no lock-jaw. Convulsion occurred without any warning symptoms but on examination, the swelling of legs was detected. There was no return of sense during the interval. Pulse was full and bounding. P/R = $\frac{120}{31}$ Temperature 102.2°. Morphine ¼ gr. with Atropine 1/100 gr. was immediatel

given by injection. Rectal douche was given without much success. Cold was applied to head and hot-water bottle to extremities, patient was wrapped in blankets. The oral medication was out of the question. Rectal Saline with Sodi. Bicarb, Glucose, Chloral Hydras and Bromide was advised. Second dose of Morphine ¼ gr. alone was injected after two hours as there was no improvement. On the second day, as there was increased swelling of legs, Sodium Chloride was stopped from the rectal infusion. Bladder was emptied by aseptic catheterisation; there was definite swelling in the bladder area. The next morning, convulsion was of less intensity, intervals were longer, but no consciousness. In the evening, there was no fit. Intramuscular injection of Glucose 12½ per cent, 25 c.c. was given morning and evening.

The fit was controlled after 24 hours, the patient improved gradually, regained consciousness in the evening when alkaline mixture was pushed with Bromide and Glucose and plenty of fluid was given. The patient came round within a week.

She developed one more attack of fit after a fortnight while doing ordinary avocations of life in one evening. One injection of Valerian 1 c.c. and 4 doses of Alkaline mixture with Bromide cut short the attack and the patient is alright uptil now.

CASE No. 3.—Mrs. B. Dassi, Hindu female, aged 16 years, primipara—On 12-10-38, she developed an attack of convulsion 3 hours after delivery. The convulsion was of moderate severity. The inmates of the house took it to be due to weakness and gave her a cup of warm milk. She remained quiet for 2 hours. The convulsive seizures reappeared with greater severity from the early morning with loss of consciousness, her legs were swollen. She was immediately given one dose of Morphine ¼ gr. with Atropine 1/100 gr. Another intramuscular injection of Glucose 12½ per cent, 25 c.c. was pushed into the gluteal region. Rectal Glucose with Sodi. Bicarb with Bromide and Chloral was advised 4 hourly. Next morning, she was rather bad, pulse was weak, dyspnœic. One injection of Glucose was given intramuscularly and one tablet of Hyoscine Hydrobrom. with a tablet of Digitalin was given by mouth. She gradually improved and completely recovered within 10 days. Alkaline mixtures with Glucose and liquid nourishing diet were prescribed after she regained consciousness and could take things orally. On the second day, bladder was relieved with catheter, and glycerine olive oil enema was given with good result. The following alkaline mixture was prescribed:—

℞ Sodi. Citras ... gr. 10
Sodi. Bicarb ... gr. 10
Pot. Bromide ... gr. 10
Chloral Hydras ... gr. 10
Tinct. Hyoscyamus ... min. 15
Mag. Sulph ... ʒ 1
Syr. Aurantii ... ʒ ½
Aqua ad ... ʒ 1

Mft. mist. dose 1, send 4 such; one dose every three hours.

Conclusion.—It should be added last of all that the successful treatment of eclampsia depends upon the early recognition of the disease, immediate institution of the appropriate treatment, close supervision and proper careful nursing. Each and every individual case should be manipulated and treated on its own merits.

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Some Ocular Symptoms as a Guide in the Diagnosis of Systemic Diseases*

BY

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Ramnad.

JUST as the face is the index of the mind, so is the eye for many systemic diseases. Very often the first clue to the presence of a constitutional disease is discovered by the ophthalmologist. A little knowledge of the eye with that of the proper use of the ophthalmoscope, will really benefit the medical practitioner in the way of an early and proper diagnosis of many a disease. It is evidently impossible to do full justice to this very important subject within the brief space of a Journal, but the following list of diseases that can be diagnosed from ocular symptoms will not only be useful in themselves, but will also stimulate those interested, to further reference to authoritative treatises on the subject.

Syphilis.—The most common disease that manifests itself in all its stages in the eye is syphilis. There is no part of the human system that is not affected by this disease. So also every part of the eye is liable to be affected by it.

1. *Eye ball and ocular muscles*:—Paralysis of the extra ocular muscles including those of the eyelid is common in tabes and in fact may give the first evidence of the disease. Ptosis of the eyelid may be the only manifestation of syphilis in certain cases. Conjugate deviation and external ophthalmophlegia which give rise to diplopia (double vision) are almost exclusively caused by syphilis. Nystagmus occurs as a late complication of syphilis of brain and spinal cord.

2. *Cornea*:—Interstitial keratitis is one of the common manifestations most frequently met with in hereditary syphilis and is a rare complication of acquired forms.

In India, iritis in adults, if not due to injury, is almost always a manifestation of acquired syphilis in its secondary stage. The time-honoured Argyl Robertson pupil (a pupil that does not react to

* Specially contributed to 'The Antiseptic'.

light but to accommodation) may be regarded as an incontestible *proof of* syphilis. The unequal varying of pupil of the general paralysis of the insane may be a valuable point in the diagnosis.

3. *Choroid and retina* :—These are more frequently affected by syphilis than by any other disease. In the early stages of the disease, there is retinitis and dimness of vision, if the macula is involved or if there are fine dust-like hæmorrhages in the vitreous. The retina becomes swollen and cloudy, scattered with white irregular spots. The optic nerve may be congested. As the disease advances vascular and atrophic changes with spots rounded with dark pigment may be found—complete atrophy of the retina and optic nerve with loss of vision being the end results.

4. *The optic nerve* :—In India, optic atrophy is very common specially in young individuals. Since very little can be done in its advanced condition, it is most essential that an early diagnosis should be made to save many an individual from the catastrophy of blindness. The optic disc with a dusky white colour is attributed to be characteristic of syphilis. Primary optic atrophy with its white or grey disc with well marked margins and small vessels especially the arteries, has been observed mostly in tabes dorsalis.

Tuberculosis.—Ocular tuberculosis fortunately is not so common in India as in the West. The book treatment of phlyctenular conjunctivitis should not be followed; for, the phlyctenules are seen along with acute conjunctivitis. But where phlyctenules are long-standing with marginal ulceration or keratitis is seen, it is safer to treat the condition as *tubercular*. Miliary tuberculosis is the form very often seen in tubercular choroiditis. In young individuals, perivasculitis of the veins or recurring vitreous and retinal hæmorrhages are strongly suggestive of tuberculosis.

Bright's Disease.—The most important ocular manifestation of chronic Bright's disease is retinitis. Generally, both eyes are affected. The fundal picture is of severe retinitis. The blood vessels are filled up and small retinal hæmorrhages and exudates are found. The whole retina is scattered with small white patches. The macula is surrounded with yellowish or white spots. Optic neuritis is also common. Sub-conjunctival hæmorrhages as also iritis may occur in these patients. An individual with albumin in the urine and retinitis gives a very bad prognosis. These patients do not live long. Their maximum period of life after the onset of retinitis is two years. A very early diagnosis of the disease and intensive and up-to-date treatment may help to prolong the life for a little more time. It has been my sad experience to have lost two of my friends within four months after these symptoms were first noticed in them.

Diabetes.—Diabetes exhibits various ocular leisons, the most frequent being retinitis. Though the prognosis is a little serious in this condition, it is not so bad as in albuminuric retinitis, since in most cases, the disease is amenable to treatment. The fundal picture in these cases differs a little from that of albuminuric retinitis, the

changes being more of degeneration than of inflammation. Small punctiform hæmorrhages, usually deep, are fairly frequent. Early developments of cataract and iritis are also some of the common manifestations in diabetes. Paresis of ocular muscles especially that of accommodation must be looked upon as very serious because its site is probably nuclear. Presbyopic patients requiring a higher power of glasses than usual may be suspected of diabetes. So also patients above fifty developing myopia rapidly, very often exhibit sugar in their urine.

Ocular Changes During Pregnancy.—It is in renal complications in pregnancy that an ophthalmoscopic examination is most useful. It can warn one of the evidences of insidious poisoning in pregnancy before other positive signs are manifested. In cases of persistent vomiting, the obstetrician is in doubt whether it is not safer to terminate the pregnancy. If there be a hæmorrhagic retinitis or at least a halo of cloudiness around the optic disc, it denotes a severe toxicosis and an immediate termination of pregnancy is indicated.

Albuminuric retinitis with diminished urine is not so serious, but if with retinitis there occurs a sudden loss of vision and eclampsia, there is danger of losing the mother and child. There is a chance of saving the mother, if the uterus is evacuated within 36 hours of the onset of blindness.

Retrobulbar neuritis with diminished or total loss of vision is due to general toxicosis. If the vision does not return early, it is advisable to induce labour.

Arteriosclerosis.—From a careful examination of the fundus of the eye, an early detection of the evidences of general arteriosclerosis is possible. The vessels of the retina lose their translucency. The thickened arteries press on the veins, when they cross them, and give a beaded appearance with white lines on their sides. In advanced cases, narrowing of the lumen or obliteration of the vessels is noticeable. When vascular changes are marked in the retina, it is considered to be of serious import; because, such cases may develop cerebral hæmorrhage at any time.

Multiple Sclerosis.—In this disease, eye symptoms are the first to be noticed. Passing attacks of blurred vision form an early symptom and it is for this reason that an ophthalmologist is first consulted. The most important and classical signs are bi-temporal atrophy of the optic nerves and nystagmus. Paresis or paralysis of one or a group of eye muscles may occur which may lead to diplopia (double vision). This disease affects adults, usually females between the ages 15 and 35.

Intracranial Lesions.—Ocular symptoms in cerebral tumours are varied according to their location in the brain and the degree of increased intracranial pressure. Along with the classical and general symptoms *i.e.*, head-ache, vomiting, slow pulse, and an intellectual dullness, the chief ocular signs are swelling of the optic nerve-head (papillœdema) and changes in the visual fields and blind spots.

Paralysis of the various ocular nerves and changes in the pupils are manifestations often associated with cranial tumours. Location of the tumours in the brain is possible by a careful study of the visual fields and other associated ocular signs and symptoms.

Primary optic atrophy and bi-temporal hemianopia are attributed to be the signs of hypophyseal tumours.

Diseases of the Heart.—In valvular diseases of the heart due to lack of compensation, congestion of the veins of the retina is observable. They look full and darker in colour than usual. The presence of a clot in any of the retinal vessels often speaks of heart disease. In aortic insufficiency, pulsation of retinal arteries is always noticeable synchronously with the radial pulse.

Deficiency Diseases.—Vitamin ' A ' deficiency is manifested very early in the eye. Inability to dark adaptation is a very sensitive test for the earliest cases of Vitamin 'A' deficiency. *Corneal and conjunctival appearances.*—A dry area on the bulbar conjunctiva with a whitish foam on it, is typical of xerophthalmia. The colour of the conjunctiva is smoky or dirty brown. Many mistake it for jaundice. Often, this condition is associated with varied degree of hemeralopia or night blindness. The worst form of the affection is keratomalacia. The cornea simply breaks down for want of nutrition and resistance and the whole eye is lost. Keratomalacia is also associated with chronic diarrhœa, dysentry, dry skin, marasmus, pneumonia and kidney disease.

Follicular catarrh is associated with general deficiency and a general folliculosis in the system including adenoids, enlarged tonsils etc., is often observed.

Liver and Gall Bladder.—Jaundice is the most frequent of the symptoms found in the affections of the liver and gall bladder. Retinal hæmorrhages are noticed in certain cases. Night blindness and pigmentary changes in the retina are attributed to be the disturbances of liver.

Exophthalmic Goitre.—A number of eye symptoms are exhibited in this disease and an early diagnosis is possible before other general symptoms are observable. ' Græfe's sign ', the inability of the upper eyelid to follow the eyeball, when looked downwards, ' Stellwag's sign ', infrequent winking and widening of the palpebral opening,—' Moebius sign ',—inability to converge, and exophthalmos are some of the classical eye signs usually noticed.

Encephalitis Lethargica.—In this disease, the ocular manifestations share the general muscular weakness and lethargy. The eye signs appear very early and serve a valuable aid in its diagnosis. The patient usually comes with partial ptosis of the eyelids and with difficulty to gaze upwards. Diplopia is very often complained of by these patients due to paralysis of the external rectus muscle. Nystagmus is quite common in some as also the disturbances of the pupils and of accommodation.

Diseases of the Nasal Accessory Sinuses.—Any inflammation and infection of the sinuses easily spreads to the orbital tissue because of the proximity of the latter to the former. The eyelids get swollen and the whole conjunctiva gets injected. If any purulent condition persists, the optic nerve is inflamed (retrobulbar neuritis) which produces a central scotoma. Neuralgia and paralysis of one or more of the ocular muscles are often seen in this affection.

Diseases of the Ear.—The significance of choked disc in purulent diseases of the middle earis that it always indicates an intracranial complication and is therefore a valuable guide for the timely operative intervention. In otitic sinus thrombosis, pathological changes in the fundus as choked disc, are to be found in almost two thirds of the cases. An unilateral pulsating exophthalmos may indicate involvement of septic sinus thrombosis. Paralysis of ocular muscles may also occur.

Tonsils.—Diseased tonsils produce a number of ocular symptoms such as chronic conjunctivitis, optic neuritis and sometimes paralysis of the ocular muscles. Even thrombo-phlebitis in the orbital veins has been noticed in certain cases from the infected tonsils. When tonsils are suspected in any of the eye symptoms, it is best to have them surgically removed.

Teeth.—Pyorrhœa is one of the chief causes for many of the inflammatory diseases of the eye. Conjunctivitis, keratitis, iritis, retinitis, and optic neuritis are some of the manifestations of the disease. Thrombosis of the central vein of the retina, the infection being extended through the apical veins, has been noticed in some cases. Chronic septic condition of the teeth always exerts a disastrous effect in the eyes and frequently it has been the main cause for complete loss of sight in some cases.

Old Age.—The occurrences of repeated small hæmorrhages in the conjunctiva or retina in individuals over 50 or 60 are a precursor of cerebral apoplexy.

Ocular Changes in Menstrual Diseases.—In some women, a number of eye symptoms are noticeable during the suppression of menses. In some, retinal hæmorrhages, retrobulbar neuritis, amourosis and even optic atrophy from loss of blood are some of the manifestations.

During the time of puberty, very rarely subconjunctival hæmorrhages are noticed in some girls suggestive of vicarious menses.

Whooping Cough.—Subconjunctival hæmorrhages are often seen in patients, especially children in whooping cough. Hæmorrhages may occur in anterior chamber and in the retina, when the cough is severe.

Hysteria.—The most important manifestation of the eye in hysteria is loss of vision. But no changes are noticeable in the fundus and the pupillary reactions are normal.

Haematuria*

BY

Capt. R. C. Toyle, L.M.S.,

Madras.

BEFORE I begin, I must inform the members of my profession that my intention, in writing this small article on "hæmaturia" is not to dilate on what is known already to the well-informed readers, but to arrange the different causes of the presence of blood in the urine, the best way I could, to make it easy for the busy practitioners to revise.

The admixture of blood with the urine may take place in the kidneys and pelves, the ureters, the bladder or the urethra.

1. In case the blood is from the kidneys or their pelves, the blood is freely mixed with the urine and the corpuscles are either massed together or broken up.

2. If it is from the ureters due to some lesions in the ureters or calyces, coagula of a cylindrical shape or typical casts of the calyces may be found.

3. If from the bladder, the portion last obtained from the specimen of urine taken will be found to contain more blood. In this case, the bleeding point is easily located by cystoscopy.

4. If from the urethra, the first portion voided will contain blood and the urine last voided will show no signs.

In all these cases, the blood may be either visible or not visible to the naked eye, according to the degree of bleeding. There are, however, different tests with which we can easily find out the presence of blood in the urine. I refrain from mentioning them here as they are well-known to everyone.

If the blood is from the kidneys and pelves, it may be either unilateral or bilateral.

(A) Unilateral is caused by :—(1) direct injury as stab wound, gun-shot wound or severe fall; (2) rupture of varicose veins or of any other smaller blood vessels due to extreme congestion; (3) acute inflammation of the pelves; (4) stone; (5) tubercular kidney; (6) cancer; (7) embolism of the renal artery; (8) thrombosis of veins; (9) sudden rupture as in hemophilic subjects.

(B) Bilateral :—The above causes may contribute to bilateral bleeding also. Besides those, other causes are: (1) acute and chronic interstitial nephritis; (2) blood-pressure; (3) irritant poisons *e.g.*, large doses of Salicylic Acid, Hexamine, Quinine, etc., and overdose of Cantharides, Turpentine, etc. It is worth noting, in this connection, that snake venom, especially of Russel's viper and two kinds of cobra, also brings on bleeding from the kidneys within half an hour after the bite. In the case of Russel's viper, injection of a dose below lethal dose causes more bleeding. In the case of other cobras, the venom,

* Specially contributed to 'The Antiseptic'.

on the contrary, checks bleeding; (4) toxic conditions which bring on vascular changes as yellow fever, malaria, etc.; (5) parasitic—the commonest being Bilharzia Hæmatobia and Filaria Sanguinis; (6) auto-intoxication in pregnancy; (7) bacillus coli infection and chronic pyelitis and other bacterial injections.

Bleeding from the ureters :—The commonest causes are : (1) calculi; (2) irritants; (3) tubercular disease; (4) parasitic infection; (5) injury; (6) acute infectious diseases of hæmorrhagic character.

Bleeding from the bladder :—(1) traumatism including that of calculi; (2) acute and chronic diseases of the bladder; (3) parasitic; (4) varicosities of veins; (5) ulcerations of the mucous membrane due to either diphtheritic or tubercular infections; (6) tumours and growths including cancer (villous or fungous); (5) hemophilia; (8) infectious diseases as variola.

Bleeding from the urethra—anterior and posterior—

Anterior—Causes: (1) acute or chronic gonorrhœa; (2) traumatism from calculi or catheterisation; (3) stricture; (4) polypus; (5) tuberculous ulcers; (6) warty growths; (7) malignant growths.

Posterior—(1) as a result of inflammation of the seminal vesicles and prostate; (2) inflamed or enlarged verumontanum; (3) venereal excesses; (4) coitus—excess or after prolonged abstinence.

The inflammation of the prostate in this case may be due to gonorrhœal infections, mixed infections or syphilitic gumma. Seminal vesiculitis may be due to stone or mechanical violence. Cancerous condition is rare.

In this connection, I might mention about the case of a young man, aged 23 years, who used to bleed profusely from the upper lip and the urethra. Hæmaturia in this case was suspected to be due to gonococcal infection from a Railway hospital. He was discharged without any relief. He consulted me later on. On examination, I found it to be a case of hemophilia and seminal vesiculitis. Blood-pressure was normal. Recommended marriage. He did so and never got the attacks afterwards except once within the first fortnight after marriage.

The other cases I have to quote are two cases of Russel's viper poisoning. In both, bleeding was severe to start with, within the first half hour after the bites.

Besides these as I have mentioned above, I have seen six cases of hæmaturia due to auto-intoxication in pregnancy.

I do not mean to mention anything about the various treatments in the various forms and stages of hæmaturia, as the same is well-known to every surgeon and physician. I wonder if I have given enough of information to my readers in this small article. However, with apologies, I conclude in good faith, with the hope that this would become useful to the busy practitioners.

CASES AND COMMENTS

Two Interesting Cases

BY

D. B. Desai, M.B., B.S.

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(By the kind permission of Dr. K. B. Mankad, M.D., M.R.C.P.)

It was when I was house-physician to Dr. K. B. MANKAD, the then honorary physician to Seth Vadilal Sarabhai Hospital at Ahmedabad, that I came across the following two cases. I will first mention some facts about a case of hæmaturia due to ankylostomiasis.

1. A female child, 9 years old, admitted to the hospital for painless hæmaturia. I was told by my predecessor that the case was admitted sometime before for the same complaint. I searched out the old notes which stated very few details. The hæmaturia had stopped then temporarily by symptomatic treatment. This time also, as no cause was detected after usual X-ray examination, cystoscopy and urine-examination, the symptomatic treatment was resorted to, which relieved the patient of hæmaturia and she was discharged.

After a couple of months, the same child was re-admitted for acute attack of diarrhœa with pain in the abdomen and off and on attacks of hæmaturia and anæmia. The usual line of treatment checked the diarrhœa, but her stools were sent for examination. It showed the presence of cysts and worms. DR. MANKAD ordered the course of Carbon Tetrachlor. and Thymol to be given for ankylostomiasis. Surprisingly enough, with the relief of ankylostomiasis, the hæmaturia stopped permanently.

2. Second was the case of a male patient admitted for atrophy of the arm muscles, especially Delloid, with acute pain in the region of the head of the radius and with a history that he had sustained an injury, due to lathi-charge on the shoulder, some 6—8 months ago and subsequently the atrophy of the arm muscles set in gradually. He was very weak, anæmic and was keeping the arm always supported for the relief of pain. The case was diagnosed as muscular atrophy due to traumatic neuritis. DR. MANKAD was not satisfied with the diagnosis and he ordered the urine examination particularly for lead. The report came positive. A course of Sodium Thiosulphate injection intravenously and Sodium Iodide 15 gr. intravenously alternately twice a week and mixture of Pot. Iodide and massage cured the muscular atrophy and the acute pain subsided, which was not at all relieved formerly by any of the known analgesics.

So, it is worth while to remember that:—

(1) Hæmaturia may be caused by Ankylostomum duodenale, particularly in a female patient and in a district where ankylostomiasis is preponderating.

(2) The probable cause of its frequency in female patients may be explained by the fact that the worm makes its entry into the urinary bladder through the urethra which is near the anus.

As for chronic lead poisoning, the notable points are :—

(1) That the cases are not rare as they are thought to be looking to the easy source as explained by DR. MANKAD in his article on "Lead Poisoning" in the October 1939 issue of "The Antiseptic".

(2) Therein, he mentions that the "source of lead was from the tinning of cooking utensils in which lead was an impurity in the tin used for tinning."

(3) "Another source of lead is traced from the storage vessels, particularly vessels for storing fats *e.g.*, ghee. This ghee, according to the chemists, is an oleate and if a tinned vessel in which lead is present as an impurity, is used for storing ghee, its oleate enters into chemical combination with the lead and oleate of lead is formed. The oleate of lead is very soluble; therefore, by storing ghee in tinned vessels, a soluble salt of lead is readiiy available for ingestion into the stomach".

An Interesting Case of an Ovarian Cyst

BY

M. Abdulla, L.C.P.S. (BOMB.), L.M.S. (HYD.)

AND

Miss. D. K. Rohini, L.M.P. (MADRAS).

Nursing Home, Vaniyambadi, North Arcot District.

MRS. G. S. aged about 24 years, a resident of Tellicherry, Malabar District, was admitted to the Nursing Home for treatment of an enlarged abdominal tumour on the 27th December 1939. She complained of dyspepsia, anorexia, vomiting after food, dyspnœa, pain and great discomfort in the right iliac region, protracted constipation of 4—6 days' duration, sometimes followed by tympanites which were relieved by a purgative, and slight œdema of the lower extremities. The duration of the disease was only six months. On examination, it was found that she had slight albumin in her urine for which she was treated for 7 days. P. V. showed both the fornices full and the right one was slightly painful. Heart was weak and the bases of both the lungs slightly œdematous.

Past History.—She was married in 1934 and gave birth to a male child in 1936. The baby died of asphyxia 5 days afterwards. There is no history of any venereal disease. After the delivery, the patient noticed that her abdomen was not quite normal and that it grew in size. Later on, it was found that she had an ovarian cyst

for which she was operated upon at Madras in 1937. The cyst was as big as a No. 6 foot-ball and weighed 5 pounds. It was the cyst of the left ovary. During that operation, it was noticed that she had two very small cysts in the right ovary also. They were only punctured and left alone. Ever after that, the patient enjoyed good health. Her general condition improved and she put on some weight.

Six months ago, she noticed a tumour in her right iliac region. It grew very rapidly till it attained the present size. The measurements being 41½" round the umbilicus, 19" from xiphoid to pubis, 11" from xiphoid to umbilicus and 8" from umbilicus to pubis. The tumour was a cyst and was occupying the whole of the abdomen. A diagnosis of right ovarian cyst was made.

Operation Notes.—Date of operation 3–1–40. Salpingo-Oophorectomy was performed. Time taken was 1 hour and 10 minutes. Nembutal, two capsules were given 1 hour before the operation and the abdomen was opened under spinal anæthesia (Labat's method). A sub-umbilical incision about 7" long was made in the midline. After carefully packing the operative area with soft Turkish towels, wrung out in hot normal Saline, the cyst was punctured by a Cock's bladder trocar. The fluid which was thick and mucilaginous in character was allowed to escape slowly in order to prevent any shock. It took about 40 minutes to drain the cyst. By this time, the effects of the spinal anæsthesia wore off and the operation had to be continued under Choloroform and Ether.

A greater part of the omentum was densely adherent on the top of the cyst, the cæcum and the right uterine tube on the right side. The omentum was divided betveen ligatures and the cæcum was separated carefully by gauze dissection. The cæcum was about twice the size of a normal one. It was dilated and its medial wall which was attached to the cyst was very thin and weak. The pedicle of the cyst was ligated and the tumours weighing 35 lbs. removed. The cæcum was plicated with No. 1 cat-gut in two places *i.e.* on either side of the medial longitudinal band. The peritoneum was closed by "Base-ball" or "Out-in-out-in" stitches and the abdominal wall by Wilkie's method *i.e.* figure of 8 sutures. The sutures were removed on the 11th day and the patient was discharged cured of her disease on the 15th day of the operation.

Points of Interest.—1. The rapid growth of the mucilaginous cyst.

2. The involvement of the right ovary even after the care taken during the 1st operation by puncturing the two small cysts then found.

3. The adherent cæcum and its abnormal size. The protracted constipation, the pain in the right iliac area and the great discomfort which the patient felt were perhaps due to the dilated cæcum and its weak musculature.

Our thanks are due to the Nursing staff, more specially to Nurse Miss. M. P. Muthu who took great interest in the patient.

An Interesting Case of an Ovarian Cyst.

By M. Abdulla and Miss D. K. Rohini.

Photograph taken before operation to show the size of abdomen.

Photograph taken after the operation.

Tumour—Ovarian cyst—Weight 35 Pounds.

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EDITORIAL

The Drugs Bill

At long last, after seven years of delay, drift and hesitancy, the Government of India have been emboldened to draft and introduce a comprehensive All-India Bill to regulate the Drug trade in this country, which may be said to be partly, if not wholly in consonance with the recommendations of the Drugs Enquiry Committee Report, submitted to the Government in 1932 and with the views of the Medical and Pharmaceutical Profession and the general public. No doubt, there was an abortive attempt made in 1937 to bring out a Bill but being too narrow and restricted in its scope, it had to be thrown out by the Assembly. The redeeming feature of this Bill is that the Government of India had taken the necessary sanction from the various Provincial Governments to prepare an All-India Bill so that there may be thoroughness and uniformity in its application. But, we are afraid, this Bill lacks that democractic spirit, which must necessarily prevail, especially when the Government of India purports to act for and on behalf of the autonomous provinces.

As a glaring instance, we may point out that the Drugs Technical Advisory Board that has been constituted under this Bill, is almost entirely official-ridden. Seven out of the eleven members are to be ex-officio members, two to be elected by the Inter-University Board from among the teachers of Medicine and Therapeutics are also likely to be officials. The remaining two *i.e.*, pharmacologists to be elected by the governing body of the Research Fund Association may probably be non-officials, but they may not be altogether free from official tinge. The one profession which is vitally interested in this Bill, *viz.*, the Pharmaceutical Profession, is unrepresented, while the Independent Medical Profession, on account of whose persistent clamour and agitation this Bill owes its origin, have no part or lot in it. This

defect should be remedied at least in the Select Committee stage. Certainly, there can be no harm in adding two elected members from the Independent Medical Profession and two more, elected from the Pharmaceutical Profession, as the official majority can be maintained unimpaired, even then. After all, it must be understood that it is only those that know the ins and outs of the drug trade can give reliable information and data, which may be of great assistance to the Advisory Board.

The next thing we have to comment upon is that the Bill has failed to take cognizance of the existence of recognised international pharmacopœias. The schedules are vague and merely refer to "the standards of identity, purity and strength, specified.....in any other prescribed pharmacopœias." These pharmacopœias should be specifically mentioned in the schedule; otherwise, there will be the danger of shutting them out for political or economic reasons. The result will be that India may have to shell out more money and obtain less efficacious medicines, which may be prescribed by the Central Government on the advice of the Board, as substitutes for these medicines. India cannot afford to rely on the British Pharmacopœia alone for her supply of medicines. We hope that the Select Committee will see that the schedules are suitably altered so as to include recognised international pharmacopœias as well.

Lastly, nothing has been said in the Bill about the medicines made from the indigenous drugs. The Drug Enquiry Committee made no special recommendations on this behalf, as the terms of reference precluded the Committee from so doing. It would, however, be worth while publishing the findings of this Committee on this subject. They were :—

(1) That many of the crude single drugs as well as the compounded medicines used in the indigenous systems of treatment and offered to the public for consumption are adulterated and of poor quality.

(2) That, in the interest of the majority of the public in this country who use them, they should be brought under some control.

(3) That, in the absence of standards, these drugs cannot be controlled on the same lines as drugs and chemicals recognized by the British Pharmacopœia and other Western preparations.

(4) That the drugs and preparations of indigenous systems of treatment should be kept entirely separate at present.

(5) That, before any step can be taken to control the purity of such drugs and preparations, the systems of Indian medicine should organize themselves, by having an uniform curriculum worked out for the instruction and training of the parctitioners throughout the country.

(6) That the practice of Indian medicines should be restricted to properly trained, qualified and registered practitioners.

(7) That only persons with expert knowledge of these systems can initiate steps to standardize the drugs and preparations they use, with a view to bring them under control".

The Independent opinion of COL. CHOPRA, who presided over this Committee, was expressed on another occasion in these terms :—

"In the case of Pharmacopœial drugs, the patients to whom these drugs are prescribed will not naturally benefit by them. In diseases such as pneumonia, diphtheria etc., it may make all the difference to the life of the patient whether he is getting a drug of proper strength or an adulterated or useless preparation"-

"In the case of complicated organo-metallic compounds, if they are not properly prepared and tested and in a state of absolute purity, their use will be positively dangerous and fatalities may occur. In the case of biological products, incalculable harm may follow the use of products which are improperly prepared or stored. The injection of faked Insulin in cases of diabetic coma may lead to the death of the patient. The Medical Research Council in England have described the absence of control over these problems to be "a source of grave danger to the country".

These findings and opinions cannot be ignored and the Government of India must, in consultation with the Provincial Governments, take early steps to regulate manufacture and sale of indigenous drugs and medicines and also set up a separate laboratory for testing these medicines. In view of the fact that Provincial Governments have begun to take larger interest in indigenous systems of medicines, the Government of India or the Provincial Governments, can no longer free themselves from the obligation of standardizing these drugs and medicines, since these systems cater to the needs of more than 90% of the population.

The ultimate goal of India in relation to Drugs and Medicines is to get 'Swaraj in Medicine and Pharmacy' and with that end in view, steps must be taken to evolve an Indian Pharmacopœia, which can be possible only if research work is undertaken in regard to indigenous drugs and as many of these drugs as conform to the standard of British Pharmacopœia, added thereto.

We trust that the Select Committee will consider all these aspects and so amend the Bill as to make it least harmful and most conducive to the welfare of the public.

GLEANINGS FROM MEDICAL PRESS

Medicine and Therapeutics

Vitamin B_1 in Nonanginous Precordial Pain.—MOIA and BATLLE say that there is a type of precordial (cardiothoracic) pain which has a different clinical picture and different pathogenesis from those of angina pectoris and pain from coronary occlusion. It may be either mild or acute and persistent or repeated but never paroxysmal or constant. It diffuses from the precordial region to the left pectoral region and radiates to the left arm. It may appear in persons having a normal cardiovascular apparatus or in patients with cardiovascular diseases. It develops predominantly in persons with nervous hyperexcitability. The authors, taking as a point of departure the beneficial effects of vitamin B_1 on painful symptoms which appear in certain nervous diseases, resorted to vitamin B_1 in the treatment of precordial pain in 100 cases. The cardiovascular apparatus of eighteen patients in the group was normal. Nine of the patients had neurocirculatory asthenia, seven had mitral stenosis and sixty-six had hypertension of various intensity, vascular sclerosis, coronary disorders and syphilitic aortitis. In all cases the condition dated from several years back and various treatments had previously failed. Vitamin B_1 treatment was administered every other day parenterally with the dose of 0.001 Gm. for each injection upto a total number of nine injections and in rare cases fifteen. The best results from the treatment were obtained in a group of seventy-eight patients which included persons with normal cardiovascular systems and those who were suffering from hypertension and vascular sclerosis (without involvement of the coronary arteries). Pain disappeared completely in forty cases and temporarily in thirty; in eight cases the treatment failed. In the group of sixteen cases of mitral stenosis or neurocirculatory asthenia, pain disappeared completely in five and temporarily in five; the treatment failed in six. Treatment failed in the six cases of vascular sclerosis with coronary involvement. In the cases in which pain disappeared the satisfactory results have lasted up to the present (fourteen months after discontinuance of the treatment).—*J. A. M. A.*

The Treatment of Filariasis.—An interesting report of the successful treatment of *filarial chyluria* is given by C. SANTOS (*Revista Medica Latino-Americana*, September 1939, 24, 1221). The author has studied the disease for a period of seven years, treating patients whose peripheral blood contained the microfilariæ by intravenous injections of 3 : 6-Diamino-10-Methylacridine (Trypaflavin, Gonacrine) in a ½ to 2 per cent. solution. It is emphasized that if microfilariæ are not found in the blood no benefit is obtained from this treatment but, on the contrary, an aggravation of the patient's general condition may occur. The report concludes with a statement to the effect that whereas previously filariasis was common in Brazil no new

cases have been observed since the institution of the treatment. This point is of considerable interest in view of the fact that affected persons, *i.e.*, those with numerous microfilariæ in the peripheral blood, are much more dangerous to the community than those with few or no embryos in the blood stream, and in whom clinical symptoms have developed.—*The Practitioner.*

A new Drug for Epilepsy.—A note on the use of Sodium Diphenyl-Hydantoinate in the treatment of epilepsy appears in the *Pharmaceutical Journal*, September 23, 1939, 143, 316. The clinical use of this drug and the results obtained thereby in the treatment of epilepsy was the subject of a communication by PUTNAM and MERRITT at the Annual Meeting of the American Medical Association in 1938. Sodium Diphenylhydantoinate is the Sodium Salt of 5 : 5-Diphenylhydantoin, and is a derivative of Glycolyl Urea with a formula analogous to that of the barbiturates (*i.e.*, a derivative of Glycolyl in place of Malonyl Urea). It is stated that the drug's action is not so depressant as that of the Barbiturates and no diminution of mental alertness results from its use. No claims are made for the cure of epilepsy but it is stated to prevent or decrease the incidence of epileptic attacks. The maximum daily dosage suggested for an adult is 0·6 gm. (reduced to one half for a child), and the drug should be administered with or immediately after meals so that gastric upset may be avoided. No serious secondary reactions have been noted, but toxic symptoms in the form of dizziness, blurred vision, and rashes on the skin may occur and therefore the administration should be under the strict supervision of the medical practitioner. When substituting Sodium Diphenylhydantoinate for the Bromides or Barbiturates the change should be made gradually, a good plan being to continue the nightly dose of Barbiturate and to introduce the new drug during the day.—*The Practitioner.*

Chronic Œdema of One Leg.—The perplexities of the differential diagnosis in an obscure case of chronic œdema of one leg are discussed by L. RAMOND of the Lænnec Hospital, Paris. His patient, an authentic blonde, aged 35, was married and gave no history of confinements or abortions. Four years before she developed for the first time an obscure œdema of the left leg, for which she had been treated expectantly during three months in a nursing-home, the doctors being frank enough to declare they did not understand the case. When she left the home the œdema disappeared, but thenceforth she was subject to recurrent attacks two or three times a year, but never during the winter. At each recurrence there was no actual pain, only a sense of tension and heaviness in the left leg. On each occasion the œdema lasted from 6 weeks to 2 or 3 months, during which she could still walk, provided she wore a larger left shoe. At first localized to the dorsum of the foot and the ankle, the œdema gradually extended to a point just below the knee. For the past two years the attacks had been associated with a rash which either took the form of isolated

patches of erythema separated by areas of healthy skin, or occurred as a single patch of the size of the palm. She did not feel feverish while the œdema lasted, and she was inclined to regard it and the rash as a strictly localized phenomenon, irksome rather than serious as far as her general health was concerned. She was, however, perplexed by the mysterious nature of an ailment to which none of her doctors had hitherto been able to put a name.

On examination the left leg showed an elastic œdema not pitting on pressure. The bright red patch of the size of the palm on the anterior aspect of the ankle above the malleoli faded on compression. Its limits were well defined but not raised. The skin felt hot over this area, in which there were no vesicles or signs of desquamation. There was no itching or spontaneous pain in this area or evidence of varicose veins, and the permeability of the arteries was the same in both legs. A small and slightly tender lymphatic gland was demonstrable in the left groin. There was no albumin or sugar in the urine, and a gynæcological examination was negative. No sign of organic disease being found elsewhere in the body, and the unilateral character of the œdema excluding any general cause thereof, some local obstruction to the circulation in the leg had to be sought. Attacks of phlebitis due to varicose veins could be excluded in the absence of any sign of such veins. Besides, the limitation of the œdema to the skin of the leg did not suggest recurrent attacks of typical phlebitis. By a process of exclusion, the possibilities could be reduced to two: Quincke's œdema or relapsing erysipelas, giving rise to a streptococcal lymphangitis and dermatitis. The former diagnosis seemed improbable, as Quincke's œdema does not last more than a few hours. Only when the diagnosis of erysipelas was mentioned did the patient recall that she had had two attacks of it in the same limb, the first six years, the second five years earlier. Until the recent advances made in the chemotherapy of erysipelas, the prognosis of this form of non-tropical, unilateral elephantiasis has been dismal enough, for though each successive attack may be less violent, the skin becomes more and more thick, discoloured and hard.—*Clinical Journal.*

Visceral Neuroses. By Prof. *J. A. Ryle* (London).—Aetiology. (1) Conditioned irritability due to a previous organic injury, *e.g.* irritable colon after dysentery, irritable bladder after cystitis, asthma after bronchitis, etc.—(2) Sensitiveness or allergy. Criteria: (*a*) symptoms similar to anaphylaxis or serum sickness; (*b*) history of idiosyncrasy to some food, drug, etc., or a well defined response to specific cutaneous tests; (*c*) other allergic phenomena, such as asthma, hay-fever, urticaria, angioneurotic œdema, in the patient or his family; (*d*) intermittency or periodicity of the symptoms; (*e*) eosinophilia, favourable response to Adrenaline.–(3) Anxiety, emotional unrest.–(4) Hereditary predisposition.

Special types. The most common neuroses of the gullet are ærophagia, heartburn, globus, spasmodic dysphagia. Avoid nervous

unrest, alcohol, strong tea, cooked fats, irritating food. Spastic colon and its aggravated form (" asthma of the colon "), the mucomembranous colitis (pain, excessive output of coagulated mucus with the stools), are colonic neuroses; there is no evidence of a true inflammatory lesion (colitis); many cases give a history of worry, anxiety, domestic unhappiness, etc., and of unnecessary operations (appendicectomy, cholecystectomy, etc.). Irritations of care, fear, and conscience play an important part; some patients are sensitive to nuts, raw fruits, vegetables, purgatives, nicotine, etc. A hot bottle, a hot bath, a warm gruel enema, Belladonna bring relief.

A very characteristic rectal neurosis is painful rectal spasm without organic cause, described by THAYSEN as proctalgia fugax. The usual complaint is a severe ache of tooth-ache quality, rapidly crescendo, from 5—15 minutes duration, mostly during the night, and especially towards the early hours of the morning. The pain in the rectum may be so bad as to cause pallor and fainting. It gives sometimes the impression that the coccyx is being forcibly bent forwards or backwards. As a rule it bears no relation to defæcation, and in this it is distinct from the pain of rectal cancer, and ulcer, and fæcal impaction. Rectal crises of tabes are to be excluded by a careful history and examination of the central nervous system. The neurosis has a close association with mental worry and fatigue. Colonic spasm is a common accompaniment. Psychotherapy, Luminal at bedtime, inflating the rectum with air bring relief.

Vesical neuroses comprise nocturnal enuresis, diurnal frequency of nervous women, nervous inhibition of micturition, many cases of post-operative urinary retention (for these cases Doryl is a new and useful remedy), nervous incontinence, etc.

Of cardiac neuroses the simple paroxysmal tachycardia is often associated with other nervous and visceral disturbances. The whole man is to be studied and not merely his heart!—The vasovagal attacks (Gower's syndrome) are not to be separated from the angina pectoris vasomotoria of Nothnagel.

Calming the patient, readjustment of his life, holidays, hobbies, relaxations, exercise, etc. play an important role in the treatment of visceral neuroses. (Lancet No. 6049—6051, 1939.)—*Ars Medici.*

The Treatment of Nephritis and Nephrosis in Children.—By *C. T. Potter*, M.R.C.P., W. London Hospital.

Acute Nephritis:—For the first few days only water or fruit juices, with sugar and barley sugar or toffee, in moderate amounts, increased or decreased according to the results. If the condition improves, cereals and some milk may be added, later proteins. No salt, if œdema is present. Diaphoretics are usually unnecessary. Salicylates may be given for the headache and pains in the loins. The bowels should be opened once daily, if necessary by Saline purges. Potassium Citrate and Bicarbonate are allowed, diuretics are to be ayoided.

Certain emergencies call for special treatment. Acute cerebral œedema occurs in both acute and chronic nephritis, but not in nephrosis. Its symptoms (headache, vomiting, giddiness, apathy, drowsiness, visual disturbances, coma, convulsions) are always preceded by a steady increase in blood pressure. Should mild symptoms appear, such as headache or vomiting, and the blood pressure rise above 120 mm Hg (daily routine measurements!), one ounce or more of a 50 per cent solution of Magnesium Sulphate, should be given by mouth or by rectum, and continued every four hours until the blood pressure returns to normal. If the patient is comatose or in convulsions, a 25 per cent solution of Magnesium Sulphate (0.2—0.4 c.c. per kilo body weight) is given i.m., and repeated in 2—3 hours if the blood pressure has not fallen or begins to rise again. If this treatment fails, 10—20 c.c. of cerebrospinal fluid should be withdrawn very slowly. After the severe symptoms have been controlled, the Magnesium Sulphate should be continued by mouth. During this treatment fluids are given liberally.

Quite different is the picture of uræmia: anorexia, nausea, lassitude, weakness, stomatitis, hiccough, vomiting, diarrhœa accompanied by abdominal pain, and symptoms of acidosis such as dyspnœa of a hissing character, or periodic breathing. Here, sweating may be encouraged by hot packs, or the hot air bath which should not be continued for more than fifteen minutes after sweating has begun, and Pilocarpine Nitrate gr. 1/200 hypodermically. Venesection may prove beneficial. For headaches, Chloral, Bromides and Aspirin may be given. The bowels should be opened by Magn. Sulphate, or Pulv. Jalap. co., and the acidæmia combated by Bicarbonate and Citrate of Potassium.

Anuria. In addition to the measures for uræmia, dry cupping and poultices to the loins may be of benefit.

Acute focal nephritis may occur at the height of an infection (tonsillitis, typhoid fever, etc.). There is albuminuria and hæmaturia, but no added toxæmia, no œdema or hypertension. No special treatment or diet is necessary.

Chronic Nephritis:—Restriction of proteins is only necessary with rising blood urea which should be controlled regularly. A diet rich in vitamins is advisable (vegetables, fruit, yeast, orange juice, codliver oil, etc.) With tendency to œdema restriction of salt. For anæmia iron and liver extracts.—If symptoms of tetany occur, treatment is directed towards the seizures and the hypocalcæmia to which they are due: Chloral hydrate and Bromides in full doses by mouth or by rectum; 20 units of Parathormone i.m. and Calcium Gluconate 10 c.c. of a 10 per cent solution i.v., followed by Calcium Chloride gr. X to XX, or Calcium Lactate gr. XV to XXX every four hours by mouth.—In the later stages the blood calcium-phosphorus ratio is disturbed, due to retention of phosphates. This results in skeletal changes, and renal rickets. Then, sufficient alkalis to correct the acidæmia, large doses of vitamins A and D, and Calcium are to be given.

Hæmaturia in a very young infant should always suggest syphilis. With positive W.R. specific treatment; Bismuth should be avoided.

Nephrosis:—The onset is usually insidious. The chief features are œdema, massive albuminuria (the normal 3 to 1 ratio of albumin to globulin may be reversed), hypercholesterolæmia, anæmia. Blood pressure and blood urea are normal. The urine is of high specific gravity and contains no blood—an all important diagnostic point from chronic nephritis with œdema in which erythrocytes can always be found. There is a marked tendency to infections, especially to pneumococcal peritonitis. Occasionally complete recovery follows some acute infection: since, however, a fatal issue frequently results from infections, all efforts should be made to avoid them. No one with a "cold" should be allowed to enter the room. The skin, especially in œdematous areas, should be carefully tended to avoid excoriations from which a fatal erysipelas may originate. In the œdematous phase restriction of salt and fluids; proteins liberally, fats sparingly owing to the tendency to lipæmia; vitamins in all forms. Diuresis may be improved by Thyroid Extract, Urea (gr. V to X every 4 hours; discontinue if diuresis does not occur within 24 hours), Theophylline Sodium Acetate gr. i, or Thrombomine and Sodium Salicylate gr. V. thrice daily (discontinue if no effect). In order to increase the colloid osmotic pressure, according to HARTMANN a 6 to 15 per cent solution of Acacia in normal Saline (1—2 grams per kilo of ideal body weight) is slowly injected i.v. (considerable reaction possible; only in clinics!) The safest method for improving diuresis and anæmia at the same time is whole blood transfusion (Epstein). Fever therapy (T.A.B. vaccine.. etc.) is too dangerous. (Med. Press and Circ., No. 5225, 1939.)—*Ars Medici.*

Surgery

Interparietal Strangulated Hernia.—J. E. DUNPHY points out that when the sac of a strangulated hernia is in an unusual position the difficulties of diagnosis are greatly increased. When strangulation develops in an interparietal hernia the sac dissects between the layers of the abdominal wall instead of becoming subcutaneous. This type of hernia is probably more frequent than is generally realized. Many cases are overlooked, or are mistaken for abdominal or retroperitoneal tumours. DUNPHY reports the following cases from the Surgical Service of the Peter Bent Brigham Hospital, Boston.

A man, aged 57, was admitted complaining of abdominal pain, vomiting, distension and obstipation of 24 hours' duration. Four years before he had had an attack of severe, cramp-like pain in the lower abdomen slightly to the left. The pain was subsequently associated with nausea, vomiting and abdominal distension. He entered another hospital, where X-ray examination of the gastro-intestinal tract by means of a barium meal and enema was reported to be negative. A diagnosis of chronic constipation and possible intestinal obstruction of unknown ætiology was made. Operation was not

thought necessary and he was discharged improved. Since that time he had had recurrent bouts of pain, all similar to, but less severe than the initial attack. The attack which brought him now was more severe than usual. The pain was accompanied by nausea, vomiting and abdominal distension. The last bowel movement was just prior to the attack.

The abdomen was moderately distended and tympanitic. In the left lower quadrant there was a tender mass about 10 cm. long and 6 cm. wide. The external inguinal rings admitted the examining finger, but there was no tenderness, palpable mass or impulse on coughing.

The diagnosis was intestinal obstruction due to neoplasm of the sigmoid. However, the surgical consultant suggested a left inguinal hernia which had dissected laterally and upward toward the flank between the internal and external oblique muscles. Confirmation of this impression was obtained by X-ray examination, which showed evidence of dilated loops of small intestine in a plain film and an apparently normal large bowel, by means of a barium enema.

An oblique incision higher and longer than that usually used for inguinal herniorrhaphy was made. On opening the fibres of the external oblique muscle a tense bluish, somewhat irregular mass was exposed. This was easily delivered, and proved to be a large hernial sac which had dissected upward and laterally from the internal abdominal ring between the internal and external oblique muscles. The sac contained a strangulated loop of small bowel and omentum. The latter showed extensive necrosis with much old scarring and chronic fat necrosis, indicating previous attacks of strangulation. As the bowel was viable it was returned to the abdomen. The sac and omental tissue were excised and the neck of the sac closed by high ligation. The inguinal canal was repaired without transplantation of the spermatic cord. A year later there has been no recurrence of symptoms.

A farmer, aged 40, complained of a chronic pain in the right lower quadrant associated with the appearance of a mass in that area. Some years before an appendectomy with drainage was done, but he had never noticed any weakness or bulging in the wound, and the present palpable mass was lateral to the scar of the operation. At first it was thought to be a retroperitoneal tumour. He was advised to enter the hospital for diagnostic procedures, but he refused. A month later he was admitted for increasing pain and vomiting of 48 hours' duration.

The abdomen was distended, tympanitic and tender. An irregular puckered scar of an incision was present in the right lower quadrant, with the scar of a drainage site about 5 cm. lateral to it. There was a mass 7 cm. lateral to the scar of the drainage site, well away from the incision. It extended from the groin upward and outward toward the right flank. At first it seemed to be retroperitoneal, but examination suggested that it might be more superficial. The clinical picture

was obviously that of intestinal obstruction, but the mass could be correlated with this diagnosis only on the assumption that it was a ventral hernia arising from the drainage site and dissecting laterally between the layers of the abdominal wall.

Operation showed between the internal and external oblique muscles, lateral to the old incision, a large hernial sac under acute tension. The neck of the sac could be traced to the site of the old drainage wound. The sac contained a loop of gangrenous small bowel and omentum. Resection of the non-viable segment of bowel with end-to-end anastomosis was performed. Convalescence was marked only by a slight infection in the wound.

In both cases the clinical picture was misleading. In one it suggested a large-bowel lesion, and in the other a retroperitoneal tumour. These were the diagnoses of several observers. The correct diagnosis was arrived at largely by a proper interpretation of the physical examination, which in both cases suggested that the tumour was in the abdominal wall rather than retroperitoneal or intraperitoneal.

Interparietal hernias are usually of the indirect inguinal type. However, direct or, as in one of the cases now reported, ventral hernias occasionally become interparietal. Interparietal hernias have been divided into three anatomical groups: pro-peritoneal, interstitial and inguino-superficial. In the properitoneal type the sac lies between the peritoneum and the transversalis fascia: in the interstitial, between the muscles of the abdominal wall; in the inguino-superficial, between the external oblique aponeurosis and the skin. This latter type is the commonest and is usually quite easily recognized. In the interstitial and properitoneal types the diagnosis is more difficult, and it is in these cases that the hernia is likely to be mistaken for an intra-abdominal or retroperitoneal tumour.

Properitoneal and interstitial hernias are often composed of two sacs which are hourglass in shape. One may occupy the usual position in the inguinal canal, and the other extend laterally between the layers of the abdominal wall. There is always a common opening into the abdomen at the neck of the sac. The size of the external inguinal ring in these cases may be normal or unusually small.—*Clinical Journal*.

Conservative Surgery with Irradiation in Gas Gangrene.—According to SEWELL, in the seven years prior to 1935 twelve cases of clinical gas gangrene of the extremities were seen at the Strong Memorial Hospital. In four of these gangrene developed in the stump following amputations for other causes. In the other eight cases, on recognition of the infection, immediate amputation was advised and performed except in one instance, in which it was refused. This patient received only a small amount of serum and lived; while, of the remaining seven, four died on an average of twenty-four hours after the therapeutic amputation. In the following eighteen months,

with the introduction of roentgen therapy and Sulfanilamide, of five patients with both clinical gas gangrene and positive cultures, two died, both aged men. One had severe diabetes and lived for three days after a midthigh amputation. It is regrettable that more reports concerned with irradiation in gas gangrene have not appeared in the general surgical journals, for, although most roentgenologists are well informed of the merits of this mode of therapy, it has not been brought sufficiently to the eyes of the general surgeon. Since the introduction of irradiation and Sulfanilamide, it has been amply shown that the infection can be controlled and cured without amputation and even without surgery in numerous cases in which, several years ago, immediate operation would undoubtedly have been performed.—*J. A. M. A.*

Treatment of Cervical Adentitis.—HUNTER used a medium made up of 0.85 gm. of Sodium Chloride, 5 gm. of Calcium Chloride, 5 gm. of Gelatin, 0.05 gm. of Acriflavine and enough distilled water to make 100 c.c., in the treatment of twenty-one children with tuberculous cervical adenitis from 20 to 35 mm. in diameter. The medium was injected into the abscessed gland. From 0.3 to 0.5 cc. of the solution was used for every daily injection. The abscess regressed in twenty cases. Bilateral involvement was found in a few cases, and they responded satisfactorily to treatment. Scarring occurred in only three cases, in two of which they are difficult to detect. Twenty-nine children with slight adenitis with glands less than 20 mm. in diameter, and possibly tuberculous, received an average of three injections each of solution. A favorable response was obtained in twenty-eight. This method appeared to inhibit further hyperplasia; it holds out great promise in the prevention or treatment of cervical adenitis. After the medium has been injected at about six sites and provided the gland ceases to enlarge and soften, the injections can be discontinued until no further reduction in size takes place for a fortnight before more injections are given-—*J. A. M. A.*.

Headache and Vomiting Following Spinal Anesthesia.—JENNINGS and KARABIN determined the incidence of such post-lumbar anesthetic complications as headache, nausea and vomiting in 500 cases, in the majority of which rectal operations had been performed. This selection of cases was made because under ordinary conditions these complications following this type of surgical procedure are infrequent. In all, 153 patients suffered from postanesthetic headache; the headaches of sixty-seven (13.4 per cent) were considered as severe and of eighty-six (17.2 per cent) as moderate. In 143 cases the onset occurred within twenty-four hours after the lumbar puncture and in ten it occurred after twenty-four hours. Of the 453 patients who had less than 100 mg. of Procaine Hydrochloride, 29.6 per cent had headaches, as compared with 10 per cent of the forty-seven patients who had 100 mg. or more of the drug. One patient suffered from an almost

continuous headache for seven days and has complained of frequent headaches for eight months. With this exception there have been no serious after-effects among any of the patients in the series. A neurologic consultant, after examining the patient with the recurrent headaches, stated that no evidence was present which suggested any relationship between the complaint and the spinal anesthesia. It is the authors' belief that the most satisfactory treatment of a postanesthetic headache is a prolongation of the "flat in bed" period. Nausea and vomiting (in 34.6 per cent of the patients) were encountered with greater frequency than that reported by most operators, Most of the patients in the series received Morphine preliminary to subdural anesthesia, which may have accounted for some of the nausea; but a lack of control cases renders any conclusions unreliable. The fact that most of the patients had operations performed on the lower intestine undoubtedly was a factor in the high incidence of nausea. Despite the frequency of headaches, nausea and vomiting following spinal anesthesia, its wide adoption indicates its usefulness. Since this type of anesthesia relaxes the anal sphincter, for anorectal surgical intervention it is superior to all other forms of safe anesthesia except caudal-sacral block. Headaches as a complication of spinal anesthesia occur much more frequently than is commonly realized. Their incidence seems to be inversely proportional to the time of recumbency. Therefore further investigation is necessary if the use of spinal anesthesia for comparatively minor surgical procedures is to continue. The authors adopted HARRISON'S proposal of administering Dextrose solution intravenously in an effort to reduce the number of headaches, but as yet their series of patients so treated is too small to require comment.—*J. A. M. A.*

Sulfanilamide for Chancroid.—KORNBLITH and his co-workers used Sulfanilamide in the treatment of ten cases of chancroid. For the first five days the patient was given daily 80 grains (5.2 gm.) of the drug, 20 grains (1.3 gm.) after each meal and before bedtime. From the sixth to the fifteenth day, inclusive, 40 grains (2.8 gm.) was administered daily, 10 grains (0.65 gm.) after each meal and before bedtime. After this period, treatment was stopped whether or not the lesion was healed. The entire treatment was ambulatory. There were no untoward effects. The patients were cautioned to stop the drug if diarrhœa developed and not to use a Saline cathartic in case of constipation. They were instructed not to drink more than 1 quart (liter) of fluid during any twenty-four hours. The only other treatment advised was the use of soap and water to cleanse the lesion locally twice a day. The average time for healing was about two weeks. The authors state that, since the foregoing was submitted for publication, sixty-five proved cases of chancroid have been treated with Sulfanilamide and followed. The results have been uniformly excellent. There has been no failure or recurrence. All the lesions were healed after two weeks of treatment with Sulfanilamide alone.—*J.A.M.A.*

Fracture of the First Rib due to Muscular Violence.—A. P. AITKEN and R. E. LINCOLN report the case of a well-developed man, aged 29, who placed on his head a load of cardboard weighing 50 lb. Steadying the load with his right hand, he climbed three steps of a step-ladder when it suddenly tipped to the left. Endeavouring to maintain his balance he jerked his head forcibly to the right, and felt a snap in the left side of the neck, followed by severe pain, localized partly in the neck, but chiefly over the posterior aspect of the left shoulder. He also felt sharp pain radiating down the upper arm and the inner side of the forearm. With the onset of pain immediate rigidity of the neck developed. Within 48 hours the acute pain subsided and he returned to work. The pain in the neck and shoulder and the stiffness persisted for a week and then subsided. At the end of the third week he was free from symptoms. Twenty-six days after the injury, while pulling back a bedspread with his right hand, he again felt a violent snap in the left supraclavicular fossa followed by extreme pain, chiefly over the posterior aspect of the left scapula. Any motion of the body, especially respiration, made the pain excruciating, and caused it to radiate down the arm and the ulnar side of the forearm. He became faint and lay down. As he did so he felt a second snap in his neck. Immediately the acute pain in the shoulder subsided. However rigidity recurred, and motion of the head or arm caused pain in the supra-clavicular fossa and over the posterior aspect of the shoulder, with some radiating pain down the ulnar side of the left arm and forearm. When he lay quietly, however, he had no pain, but tingling in the fourth and fifth fingers of the left hand. Radiograms, taken the day after the second attack of pain, revealed a fracture of the first rib on the left side, at the point of insertion of the scalenus anticus muscle.

Under immobilization of the head and neck all the acute pain disappeared in a few days. Flexion and extension of the head became normal and painless. Lateral flexion to the left caused pain only when the normal limits of motion were reached. Lateral flexion to the right, however, was completely limited for several days, and any attempt to elicit this motion caused sharp pain over the posterior aspect of the shoulder-joint which radiated down the inner side of the arm. After 4 weeks all symptoms had subsided, and pain was produced only when the full limits of right lateral flexion were reached. In 7 weeks he returned to work and has been free from symptoms since.

The history of pain radiating down the left arm following sudden forced flexion of the neck to the right suggested a scalenus anticus syndrome. The first radiograms did not reveal the fracture of the first rib because of the overlying clavicle. However, those taken after the second onset of pain showed a distinct fracture.

Fractures of the first rib are very rare. They are not routinely looked for, and are difficult to see because of the overlying clavicle. If an examination were made when the patient complains of pain in the posterior aspect of the shoulder following direct or indirect trauma, it might be found that this lesion is not so uncommon as is believed.

ARBUTHNOT LANE stated that fracture of the first rib can take place in only one of three ways—by indirect violence, the force being transmitted through the clavicle; directly by force applied from behind; indirectly, by force being transmitted through the [illegible]. Although most of the reported cases have been due to one [illegible] mechanisms, two cases are recorded in which the fractures were said to be due to muscle-pull. That fracture of the first rib can be due to muscle-pull, particularly that of the scalenus anticus, is shown by the preceding case.—*Clinical Journal*.

The Three-Dye Treatment of Burns.—"The three-dye treatment of burns" was devised in America in 1933 by R. H. ALDRICH. At the Royal Melbourne Hospital it has given good results in a series of 35 cases, including victims of the recent bush fires. J. B. IRVINE, Senior Resident Medical Officer, claims for it advantages over Tannic Acid, of which the solution does not keep and is a poor antiseptic. The tan produced is prone to crack, and an already infected surface cannot be tanned. In the three-dye treatment an aqueous solution of 1 per cent. Gentian Violet and Brilliant Green and one-tenth per cent. neutral Acriflavine is used. This solution is inexpensive and keeps indefinitely, so that it can be always ready for use by those who seldom have to treat burns. The analgesic action of the Gentian Violet soon relieves pain, and one or two applications of the solution rapidly form a coagulum. The solution also is a powerful antiseptic. The Gentian Violet has a selective action against Gram-positive organisms, and the Brilliant Green and Acriflavine against Gram-negative. The solution has the drawback that it stains clothing.

The solution can be kept in readiness in factories and is an ideal first-aid application. Many patients present themselves with burns covered with Carron oil and bandaged. This first-aid treatment is to be deprecated, as the oil must be removed by the painful use of spirit before any tanning method can be used, and peeling off the bandages causes agony. No attempt is made to "clean up" the burnt area by scrubbing with soap and water, for the burning must sterilize as deeply as it produces necrosis. Trauma with a nail-brush or any friction merely forces infected material from the surface through the coagulated area.

When a large area of skin is involved, a preliminary injection of Morphine may be necessary to relieve pain. When the area of the burn is not great, the relief afforded by the use of the dye is generally sufficient.

Blisters on the burnt area are snipped, the dead skin is removed, and the burnt area is dabbed, painted or sprayed with the three-dye mixture. A second application after about half an hour is usually

given, but is not always necessary. Tanning begins immediately after the first application. The tan formed is not so thick as that produced by tannic acid, but it is more flexible. Delayed blisters appearing within a few days of the burning require snipping and removal of dead skin and application of the dyes.

No dressings are used. The patients who are not admitted to hospital are instructed to arrange their clothing so that, as far as possible, no pressure is applied to the burnt area; those admitted are put into suitable postures and covered with cradles.

Patients with extensive burns require careful and continuous treatment. They are losing a large amount of fluid both from the burnt area by evaporation and into the tissues. Early and efficient eschar formation does much to prevent this loss. But in severe cases, in which considerable time has elapsed between the accident and the first application of dye, it may be necessary to restore this fluid loss by rectal or intravenous administration of Saline solution.

In from one to three weeks the eschar will come off. If the epithelium has not been completely destroyed, the surface under the eschar will be more or less normal skin. If the epithelium has been completely destroyed, a raw granulating surface remains. In this case skin-grafting may be necessary. In this series, dressings of cod-liver oil were usually employed. Since both the local application of fish liver oils and administration by mouth have been shown to shorten considerably the time of healing of burns, cod-liver oil emulsion was also given by mouth in some cases. During epithelialization care must be taken, by the use of splints, to prevent contractures due to scarring. —*Clinical Journal.*

Eye, Ear, Nose and Throat

New Operation for Glaucoma.—On the basis of a statistical analysis of the cases of glaucoma that were treated at the ophthalmologic clinic of Zurich during the years 1936-1939, WAGNER and RICHNER demonstrate the great importance of the new method which VOGT devised for the treatment of glaucoma. It is a diathermic acupuncture of the ciliary body. Following thorough anesthesia and exposure of about 2 cm. of the superior or inferior or of the temporal or nasal half of the sclera, diathermic acupuncture is begun with a current strength of from 50 to 60 milliamperes and with a needle which is 0.5 mm. in length and has a caliber of from 0.15 to 0.18 mm. With this needle from ten to fifteen diathermic punctures are made in a belt-like arrangement, 3 mm. away from the limbus. Each puncture requires one half second and the distance between the punctures is from 0.5 to 1 mm. In the same manner an equal number of diathermic punctures are made 4 mm. away from the limbus and, if necessary, the same number are made at a distance of 5 mm. From some of the punctures, a watery or a stringy fluid exudes and there is a considerable reduction in tension. As soon as the bulbus is soft, the operation is terminated by suture of the conjunctiva. It is important that the diathermic punctures be made not too close to the limbus, because this involves the danger of corneal and lenticular injuries. The pains which develop several hours after the operation can be controlled by antineuralgic remedies. The statistical report presented by the authors reveals that this method of treatment was followed by normal pressure in 72.3 per cent of these cases. This figure is high when it is considered that in the majority of these cases one of the customary operations had failed or had been unsuitable. In acute and chronic primary glaucoma and in secondary glaucoma after iridocyclitis the authors perform the classic operations, but by means of diathermic puncture of the ciliary body they are now able to cure a large number of cases of glaucoma which formerly were incurable. The operative intervention is not difficult technically and it can be repeated several times without danger.—*J.A.M.A.*

Treatment of Tuberculosis of the Larynx.—By *Mervin C. Myerson.* Quart. Bull. Sea View Hospital: Jour. Tuberculosis and Chronic Pulmonary Diseases, 4: No. 4, July 1939.

The author summarizes the actual therapeutic procedures for tuberculosis of the larynx: (1) cautery; (2) vocal rest; (3) oils; (4) light therapy; (5) X-ray therapy; (6) injection and resection of nerves.

Electrocautery:—The cautery is used in three ways: (1) The most popular and most frequent method used is ignipuncture, (2) the electrode is used for destroying extensive areas of tissue, (3) a blunt electrode is used for searing ulcerations.

The proper selection of cases is very important. The granulomatous and localized œdematous lesions yield the best responses to cautery puncture. Patients who are afebrile or who have slight elevation of temperature, and whose pulmonary lesion is completely or almost completely inactive, are the best subjects. So patients with acutely active pulmonary disease accompanied by fever, hemoptysis, loss of weight, excessive cough and respiration, or patients in the last stages of the disease are not suitable for treatment.

Vocal Rest:—The value of absolute silence is stressed. Lesions of the vocal cords, vocal processes, ventricles, ventricular bands, arytenoids and arytenoid space, especially of the ulcerative type, when not progressive, are benefited by vocal rest. Complete silence is required. Even whispering should be avoided. The duration of the period of silence depends upon the condition of the larynx and its progress in healing.

Oils:—All kinds of oils or combinations of oils such as Chaulmoogra and Cod liver oil have been used in the treatment of tuber-

ulosis of the larynx. The installation of any oil acts by removing he thick mucoid or mucopurulent secretions which adhere to the arynx, but none of them have any curative effect.

Light Therapy :—Various forms of light therapy have been used or many years : Kromayer lamp, the carbon arc lamp or reflected sun ight. Their local effect is negligible.

Injection of the Superior Laryngeal Nerve :—The injection of 2 per cent. Novocaine solution and unadulterated Ethyl Alcohol into the nerve is the most effective way to combat pain in the act of swallowing of these patients.

The site of the injection should be localized and disinfected, and fifteen minims of Novocaine should be injected into the nerve which is situated just inside the greater cornu of the thyroid cartilage in the thyroid space. The sharp pain disappears as soon as the anesthetic solution takes effect. The syringe is replaced with another syringe containing Alcohol and then 10 minims of it are injected into the place allowing three minutes to complete the procedure. When the injection of Novocaine and Alcohol fails, then the resection of the nerve may be performed.

X-ray Therapy :—The productive type of lesion reacts favorably to X-ray therapy but the active cases will react unfavorably.

The author, after an analysis of 145 larynges which were healed among 1,000 consecutive cases, reveals that eighty-seven received no therapy except vocal rest, which is routine for all cases.

In the treatment of tuberculosis of the larynx not only the type of the larynx disease should always be taken into consideration but also the nature of the pulmonary and general condition of the patient.—M. Q.—*J. P. Islands.*

Roentgen Therapy for Otitis Media.—BROWN and his co-workers state that the roentgen treatment of acute and chronic otitis media is rational because of all the body cells the lymphocytes are the most sensitive to the rays. Lymphocytic infiltration is a major and constant feature of inflammation and infection of the middle ear, and breaking down these cells relieves pressure within the cavity and thereby relieves pain. Roentgen irradiation also promotes phagocytosis, which progresses rapidly until the lymphocytes are almost entirely destroyed. The polymorphonuclears and eosinophils undergo disintegration somewhat less rapidly. In addition to this cellular destruction and phagocytosis, the X-rays are believed to liberate enzymes, antibodies and other unknown principles which also aid in the processes of autolysis and liquefaction. The technic that the authors employed has varied. At present they are using 85 kilovolts (peak), 5 milliamperes, 16 inch targetskin distance and 1 mm. of

aluminum filter. They do not follow a hard and fast rule as far as dosage is concerned but take into consideration the severity or duration of the condition and the age of the patient. In mild cases in infants they have used from 50 to 60 roentgens and in young children and adults the dosage has varied from 60 to 100 roentgens. Their cases of acute catarrhal otitis media required only one treatment. In cases of acute purulent otitis from three to seven days elapsed between treatments, depending on the condition of the ear. Patients with chronic purulent otitis received treatments about ten days apart. In acute otitis media if the temperature was not more than 99.6 F., with bulging of the drum and obliteration of the short process, irradiation was not preceded by myringotomy. Only one of thirty-one cases of acute catarrhal otitis media required myringotomy following therapy and in this instance myringotomy had been refused by the parents and roentgen therapy was tried as the only resort. The majority of the cases were seen within the first twenty-four or forty-eight hours. The average number of roentgens was 72.9 and the number of days required for the drum to return to normal was 3.15. Of eighteen cases of acute purulent otitis media, myringotomy was performed in twelve, while spontaneous rupture of the drum membrane occurred in the other six within twenty-four hours of being seen. The duration of symptoms before the first examination varied from three days to six hours. These patients received an average of 1.33 treatments, with an average of 70 roentgens. The ears were dry and the drums were normal within an average of 8.16 days. Four patients required two treatments and one patient three treatments. None of the eight cases of chronic purulent otitis media, with a history of an intermittent discharging ear of from four months to eight years, required myringotomy, the opening in the drum being of sufficient size to afford excellent drainage. Six patients received only one treatment, one received two treatments and one received three treatments. An average of 64.54 roentgens was given. The ears were dry within an average of 11.63 days. In nine of eleven cases not classified an initial roentgen treatment was given and the patient did not return for further observation, one was finally cured and one was afforded considerable relief. In conclusion the authors state that instead of mastoidectomy it now seems that not only will a short series of roentgen treatments suffice to cause an ear to become dry and free from pain, but hearing will be fairly normal in it. None of their cases have shown any complication following this mode of therapy.—*J. A. M. A.*

Obstetrics and Gynæcology

The Management of Abortion.—*Frank W. Peyton, M.D., Lafayette, Indiana*—There occur close to 700,000 abortions and 8,000 abortion deaths annually in the Uuited States. For each death many women having abortions, whether they be criminal, therapeutic, or spontane-

ous, are disabled permanently. Menstrual disturbances follow, and many are rendered sterile or susceptible to unending suffering in future pregnancies. Considering these facts, these numbers then scale the more tragic heights. Three types of abortions are considered: The complete; the inevitable, and the incomplete. How shall the case be conducted? Today, we find that active or radical therapy has nearly as many advocates as the conservative treatment. Both forms of therapy have a useful and valuable place, but to adhere strictly to any one particular routine in every abortion patient is as bad as placing every cardiac in bed and digitalizing him, or doing an immediate supra-pubic prostatectomy in all cases of prostatism. We must be directed according to our findings in each individual.

Too many attempts are being made to handle abortions at home. Any illness with as high a mortality rate as abortions should be hospitalized. In the complete abortion, where spontaneous evacuation is total, no active measures are necessary. Rest in bed for 5 to 10 days, Ergotrate, fluids, and the care of the breasts are all that are needed.

In the inevitable abortion, defined as a case which in threatening to abort, shows no improvement after ten days of adequate treatment, the objective is to hasten its expulsion. Further waiting invites infection. Usually, evacuation can be attained by castor oil, hot soap suds enema, and Ergotrate. If unsuccessful, then active treatment is warranted.

The non-infected incomplete abortion is managed as follows: for gestation under two months, the cervix is dilated with graduate metal dilators, and the retention product is removed with ovum forceps and curette. Cases falling in the second to fourth months of pregnancy should be evacuated with the gauzed finger and the ovum forceps only occasionally used. One may curette carefully for placental fragments. Afrer the fourth month, ocytocics are advised to complete the abortion, while the cervix can be dilated with a gauze pack or even a small bag. If this fails, digital removal may be resorted to after twelve hours.

Delayed evacuation is proposed in the infected or potentially infected case. An induced abortion is considered potentially infected. The treatment consists of five days of bed rest, the forcing of fluids, a high caloric diet, an oxytocic in the form of Ergotrate, a mild laxative, and some form of sedative. Sulfanilamide and transfusions are given when necessary. Profuse bleeding is the only immediate indication for radial therapy. After five days, under this delayed treatment, in patients not having completed the abortion, nor having shown signs of extension, and whose temperature has fallen, dilatation and curettage are recommended. Waiting for five days is possible and during this time an early extrauterine spread of infection is delayed or stopped instead of enhanced by instrumentation. Remember that when there are signs of extension beyond the uterus, such as tenderness over the fundus, thickening of the adnexal regions, or peritoneal irritation, proceed and continue to proceed with a "hands off" policy.

Blood transfusions are necessary, not only with profuse bleeding but also for the patient with fever and the concomitant anemia. Three hundred cubic centimeters of citrated, matched, whole blood are given every other day. As to the use of Sulfanilamide in abortions, it is reasonable true that this drug is being used universally. It is employed prophylactically in the potentially infected case, and it is used curatively for the septic case. With the information we have to hand, it is important that it should be tried.—*Jour. Ind. S. Med. Assn.*, 32: 311 (*June*) 1939).—"*The Medical World.*"

Transient Fever of the Newborn.—TADDEI noted the behavior of the rectal temperature during the first week of life of 152 infants of both sexes born in the Clinica Ostetrica e Ginecologica of Pisa. The infants were placed in three different groups, being allowed to nurse fifteen or forty-eight hours after birth and fasting or twenty-four hours after birth but fed during the day with a total quantity of 80 cc. of a 4 per cent. solution of Dextrose administered in small portions. The temperature was taken every three hours, day and night. The author found that the rectal temperature of the infant is different from that of the mother (and also of a twin in case there is one). Three hours after birth it diminishes, but in the course of the first day of life it rises again. Noticeable changes occur as a rule by the third day and disappear by the seventh or eighth day of life. The changes may be of any of the following types: (1) transient fever, (2) moderate fever and (3) hypothermia. The alterations of temperature in newly born infants are not associated with the interval between birth and nursing, fasting, the administration of Dextrose solution, the more or less intense turgor of the mother's breast, the appearance of fever with milk secretion or of nonpuerperal fever in the first week of puerperium. The results of observations do not support certain etiologic theories of transient fever, especially those which show dehydration of the infant or the passage of toxic substances from the mother to the infant through the milk as causal factors. According to the author there is a physiologic congenital lability of the system of regulation of the body temperature in infants. Changes of the body temperature occur when the lability is associated either with stimulation of the cerebral thermoregulating centres by disintegrated proteins which are absorbed by the infant's body (the so-called tumor from birth) or with a disequilibrium of hormones from structures which take part in the regulation of body temperature, such as the thyroids, the adrenals and the hypophysis.—*J.A.M.A.*

PROCEEDINGS OF SOCIETIES, ASSOCIATIONS, ETC.

The Krishna District Medical Association, Masulipatam.

(The Krishna District Branch of the Indian Medical Association).

Dr. K. Chelapatirao Nayudu, L.M.P., of Bezwada was voted to e chair to preside over the meeting of the Joint Session of the rishna District Branch and the Bezwada Branch of the I.M.A. held 1 17-2-40.

Resolutions on the formation of the Andhra Provincial Branch of ie I.M.A. were moved by Lt.-Col. T. S. Shastry, the President of the rishna District Branch of the I.M.A. and were unanimously passed.

Then the Anniversary Function of the Bezwada Medical Associaon began. This was presided over by Dr. E. Somasekhar, F.R.C.S. Eng.), District Medical Officer, M. & S. M. Ry. Hospital, Bezwada.

The following programme was gone through.

1. Presidential address which included a discussion on Enteric y the President.

2. The Annual Report was read by Dr. B. Sambamurti, the ecretary of the Bezwada Medical Association.

3. A case of Myelocele, a case of Hermaphrodite, and congenital yphilis were exhibited by Dr. H. C. Halge, I.M.D., of the Bezwada Government Hospital.

4. Case-notes on Tetanus and Pyloric Obstruction were read by Dr. M. V. Subbarao, L.M.P., Resident Medical Officer, Govt. Head-Quarters Hospital, Masulipatam.

There was much discussion on the above cases; and the meeting concluded with the remarks of the President.

The Tinnevelly District Medical Association, Palamcottah.

(Tinnevelly Branch of the Indian Medical Association).

The monthly meeting of the Tinnevelly District Medical Association was held at Palamcottah, on Sunday the 18th of February 1940, under the Presidentship of Lieut. Col. K. V. Ramana Rao, I.M.S.

Dr. T. S. Vaikuntaraman, Tinnevelly, read an interesting paper on the Treatment of Diabetes.

Dr. K. Rama Ayyar, M.B.B.S., Hony. Asst. Medical Officer, Government Head-quarters Hospital, Palamcottah, read an interesting paper on the Treatment of Enteric Fevers.

After discussion by the members present, Lieut. Col., K. V. Ramana Rao, I.M.S., summed up the salient and important features of the papers and their treatment in detail and offered his thanks to the lecturers.

The Medical Practitioners' Association, Nuzvid.

The sixth Annual Meeting of the above Association was held on Sunday, the 28th January 1940 at Nuzvid, Lt. Col. T. S. Shastri, I.M.S., District Medical Officer, Kistna, presided.

The following papers were read :—

(1) The Treatment of Sprains by Lœriche's Method, by Dr. Y. S. Choudhari of Mudinepalli.

(2) Dr. D. W. Semmens, M.D., of the local Giffard Mission Hospital, read his case notes on 4 interesting cases, *viz.*, (1) A case of Retroperitoneal Cancer, (2) Renal Calculi for which a nephrectomy was done, (3) Infective Granuloma Inguinale and (4) Cancer of body of Stomach.

(3) An exhaustive paper on "The Role of Minerals in Health, Disease and Nutrition" by Dr. V. Ananthachari, L.I.M.

(4) Case notes upon a case of 'Preputial Calculi' by Dr. S. S. Rama Rao of Khanumole.

(5) A paper on "The Toxic Manifestations of Menstruation" by Dr. N. Rama Rao, L.M.P.

(6) A case report of 'Hydrocephalus' by Dr. P. Angaiah.

The President and members held a long discussion over the above topics and the meeting closed by 9 p.m.

CORRESPONDENCE

The following communication has been sent to us for publication by Mr. Mohamed Hanif, Mg. Director: Bharat Laboratory and Chemical Works, Ltd. and Vice-President: Bengal Pharmaceutical Association, Calcutta :—

The Drugs Bill—1940.

A curtain at last seems to go down shortly upon the struggle for an Indian Drug Act. The persistent and patient efforts which bore fruit in the appointment of a Drugs Enquiry Committee, precipitated a piecemeal effort in the shape of The Drugs Import Bill 1938 hastily withdrawn in face of a vehement opposition, are now face to face with their culmination—The Drugs Bill 1940. It is definitely an advance upon its predecessor, with the exception of a few points.

When the preceding bill was opposed one of the main defects pointed out was absence of the recognition of other pharmacopœias besides British Pharmacopœia. Much of the Indian drug trade depends upon Continental, Japanese and American sources. Their medicines are manufactured according to their respective pharmacopœias, and are current in Indian market since years. Rejection of their pharmacopœias is not likely to be viewed with equanimity by these countries; their scientific development is not less than that of

Great Britain, it may also dislocate to a considerable extent Indian drug trade too.

In view of the constitutional autonomy of the provinces and the highly unpleasant experience of the exercise of their right by the provinces in respect of excise affairs, the Indian drug industry was justifiably and sincerely nervous about the choice of approach towards the solution. A balance has been sought to achieve which has been made possible by the consideration shown by the provinces for the welfare of the country at large, and in equal measure by the return of the trust displayed by the Central Government in assigning the execution of the act to provinces themselves. It augurs well for the future and it may be fervently hoped that the same spirit would continue animating for all the times, failing which, it may be noted plainly and simply—Indian Drug Industry will go to pieces immediately and definitely.

The present bill owes its inception entirely to the voluntary surrender by the provincial governments of their rights, exercisable under the Government of India Act 1935. An advisory board named The Drugs Technical Advisory Board, has therefore been formed to maintain and preserve the uniformity of action all over India. The provincial governments are thereby required, heretofore, to consult this Board whenever framing their various rules for the purpose of giving effect to the Act. A list of subjects requiring previous consultation has been accordingly fixed, which appears to be quite a formidable one and surpasses exactly speaking technical or scientific requirements. The provinces deserved representation over there; so also, important interests, *e.g.*, independent medical practitioners, manufacturers and dealers.

The formation of an Advisory Board or some other similar agency is the prevailing modus-operandi in all countries wherever such legislation is in force. Yet, nowhere, including England, similar interests have been ignored. When it is recalled, that the Government of India appointed a Drugs Enquiry Committee and that the present bill is drawn up practically in conformity with the lines suggested by the said enquiry committee and while it is a fact that the present bill does not concern itself merely with the scientific aspect of the drug business but is designed to 'regulate, import, manufacture, distribution and sale of drug'; and that the said Drugs Enquiry Committee did acknowledge the necessity and recommended co-operation of such interests and that it further went forward to recommend that as "The Advisory Board would have onerous duties to perform and should be an efficient body, above reproach of criticism of any kind", the present disregard of the recommendations of the said Committee, the total neglect of vital interests, and sacrifice of 'efficiency' is liable to be miscontrued very seriously by the independent medical profession, the manufacturers and dealers.

Let us take the example of Great Britain. Conduct of similar affairs has been handed over to a semi-official body,'The Pharmaceutical

Society of Great Britain', by a Royal Charter. This body is still mainly an elected body, and has received the Charter only recently. So in most of our provinces there are active and respectable pharmaceutical associations. The associations in due course will have to be entrusted with practical management of their own houses, as regional associations are too cumbersome and not likely to prove workable. It would therefore be in the fitness of things if they were given a say in the affairs and allowed the opportunity to prepare themselves for the eventual responsibility these associations have to shoulder, if the evolution of pharmacy in India is to proceed on normal and accepted lines.

Dr. V. R. Shaw, Pilwai, writes :—

With reference to the query made in the Antiseptic of January 1940, I state 'yes': it must be a case of Atebrin Poisoning. I have treated one such case of Atebrin Poisoning giving symptoms of madness. The case yielded to the treatment of Luminal and Bromides and purgatives on alternate days.

So far as I know, Atebrin has a lethal effect on the liver cells which may be consequently acting on the brain. Secondly, elimination (excretion) may be defective in such cases.

Messrs. Foster & Co., Bombay, on behalf of The Glaxo Laboratories, Ltd., have asked us to announce the following :—

Dispute over "Glaxo" name.

Perpetual Injunction Granted.

(*Before the Hon. Mr. Justice Somji*).

Glaxo Laboratories. Ltd. ... *Plaintiffs.*

vs.

Glaxo Surgical Co. ... *Defendants.*

In a suit filed by Glaxo Laboratories Limited, of Greenford, the well-known manufacturers of Glaxo products against Glaxo Surgical Company of Sialkot City, in the High Court, Bombay, the plaintiffs' case was that they had for several years imported into and sold in India, pharmaceutical and medical preparations through H. J. Foster & Co., of Bombay, that on almost all such products the name "Glaxo" appears prominently; that one of such products, a baby food by the name of "Glaxo" which contains the word "Glaxo" printed in a distinctive style, has become very popular all over India and that the word "Glaxo" appearing as part of the name of any concern has come to connote that such concern is connected with the plaintiffs. They complained that the name of the defendants was so similar to their name as to deceive and that the defendants had advertised and sold surgical products under the name "Glaxo" printed in the distinctive style in which it is used by the plaintiffs.

At the hearing of the suit on the 22nd December 1939, a decree was passed granting the plaintiffs a perpetual injunction restraining

the defendants, from carrying on business under the name of "Glaxo Surgical Company" or under any name which contains the word "Glaxo" or under a name which is calculated to deceive the public.

MEDICAL NEWS.

Birth Control Clinic, Dadar, Bombay.

The total number of people who visited and sought advise at the Free Birth Control Centre conducted by the Birth Control Research Committee of Vile Parle, at Dadar, during the year ending 15th December 1939, was 2896, out of which 1212 were males and 1684 were females. The office of the Birth Control Research Committee and the Birth Control Centre will be shifted from the 1st of January 1940 to *Empress Mahal*, Block No. 4, D. Khodadad Circle, opposite to Tram Terminus, *Dadar-Bombay 14.*

Association of Surgeons of India.

The Association of Surgeons of India offers an annual prize of the value of Rs. 100 to the best essay based on original work on a subject to be decided by the Governing Body of the Association and announced at the beginning of every year.

The conditions of the award can be obtained from,

Dr. C. P. V. MENON, *Hony. Secretary,*
Association of Surgeons of India, Binfield, Kilpauk, Madras.

NOTICE

Government of India, Department of Education, Health and Lands, New Delhi, the 10th February 1940.

Gonadotrophic and Lactogenic Hormones—International Standards—Distribution by Biochemical Standardisation Laboratory.

International standards for (*a*) the gonadotrophic substance of pregnant mares' serum and (*b*) the Lactogenic (crop gland stimulating) substance of the anterior lobe of the pituitary gland (Prolactin, Galactin, Mammotrophin) are now available for distribution at the Biochemical Standardisation Laboratory, Calcutta. They have been prepared in accordance with the recommendations of the Third International Conference on the Standardisation of Hormones, held at Geneva in August, 1938.

The Biochemical Standardisation Laboratory, which has been appointed by the Government of India as a "National Centre" for the distribution of standard preparations of biological products, holds these standards on behalf of the League of Nations and sends them on request free of charge to any bonafide research institution or commercial organization. The Laboratory also gives all relevant information regarding the standards to those who are interested in their use.

INDEX TO ADVERTISERS, MAR. '40.

Regd. No. 9 M. 429. APRIL, 1940 Vol. XXXVII. No. 4

The Antiseptic

A Monthly Medical Journal

Edited by

Dr. U. Rama Rau, M.L.C. & U. Krishna Rau, M.B.B.S.

CONTENTS.

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Index to Advertisements, see page 38.

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A retired Colonel of the Indian Medical Service writes :—

Dear Sirs,—Following repeated attacks of debility due to long service in the tropics, I was left with obstinate chronic bronchitis, severe flatulent dyspepsia and a general neurasthenia, which took the form of mental depression (irrational fear, neuritis of musculo-spinal nerve), etc. The action of Angier's Emulsion was wonderful. (Observe that these symptoms were of nigh two years' duration). The first few doses showed a perceptible amelioration—a couple of bottles removed all symptoms. I have no cough now, eat well, sleep well, am not a bit nervous, can walk a hillside with a gun or wade a river all day salmon fishing, and I am 60 with 24 years' Indian service behind me. The effect was equally good with my housekeeper, who suffered from chronic bronchitis and dyspepsia. I could quote a dozen similar cases.

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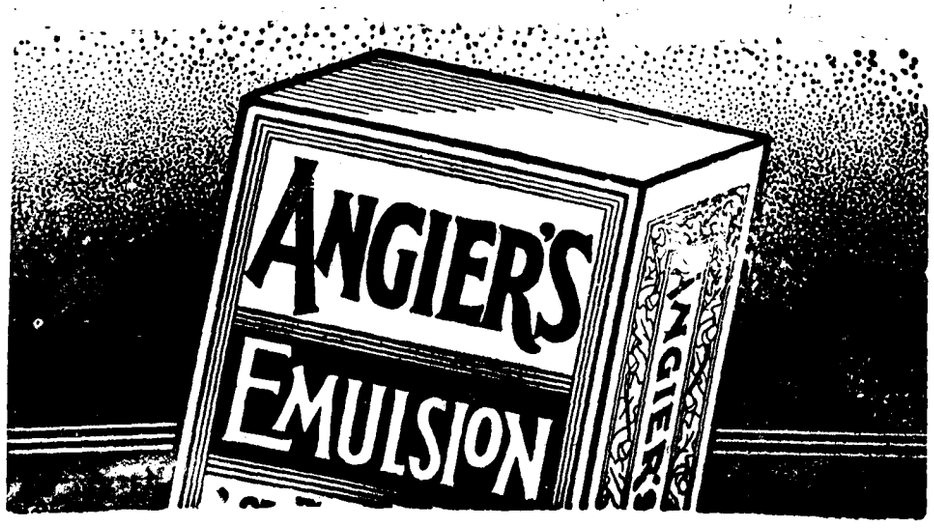

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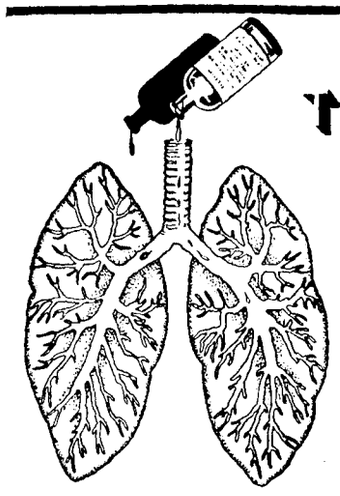

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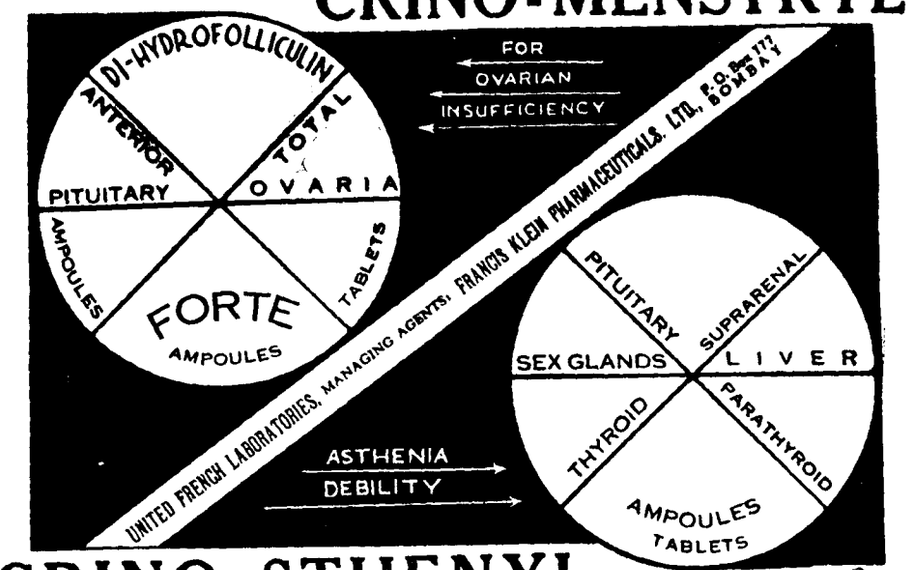

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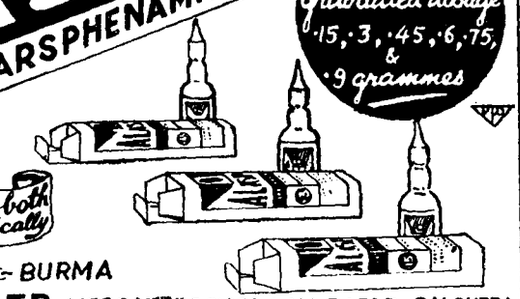

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ORIGINAL ARTICLES

Reactions to Arsenic in Syphilotherapy*

BY

V. Varahalu Chetty, M.B., B.S.,

Honorary Assistant Venereologist and Dermatologist, King George Hospital, Vizagapatam.

At the end of the 19th century, treatment of syphilis, which was mainly by Mercury and Iodides, was an affair of charming simplicity. However, with the introduction of Salvarsan by EHRLICH in 1910 and the subsequent development of other arsenicals like Neo-Salvarsan etc., the situation has steadily increased in complexity. The drugs used in modern syphilotherapy are all toxic. The pentavalent group of arsenicals attacks the nervous system mainly and is neurotoxic. Trivalent arsenic is vasculotoxic; it attacks the vascular system, the liver and bone marrow and through the vascular system, the skin. It is well known that Neo-Arsphenamine preparations are chemically very unstable and vary in their toxicity and therapeutic activity from one brand to another and from batch to batch even of the same brand.

Pharmacology.—To understand the toxicological background of the various reactions in arsenical therapy, it is essential for the practitioner to be familiar with the fate of the arsenicals administered to human beings—their distribution, storage and elimination. Chemical analysis of the blood and tissues of experimental animals has shown that when an Arsphenamine is injected intravenously, it begins to disappear from the blood stream within a few minutes after the injection and that after 3—4 hours, it is present in the circulating blood only in traces. Most of the drug is found in the bile, urine, liver,

* A paper read at a monthly meeting of the Indian Medical Association, Vizagapatam District Branch and sent to 'The Antiseptic' for publication.

spleen, stomach, intestinal tract and the skin. Small portions appear in the perspiration, saliva and the milk of lactating women. The drug is mainly stored in the liver, spleen and kidneys. Elimination mainly takes place through the intestines and the urine, the maximum excretion occurring on the first and second day after the injection. Small amounts of arsenic which are retained in the tissues are gradually eliminated over a period of many weeks.

Reactions from the Arsphenamines may be classified in various ways but the following, based on etiological grounds, seems to serve the purpose well.

I. Local reactions.

II. Reactions contingent on the disease.
  (1) Therapeutic shock.
  (2) Therapeutic paradox.

III. Reactions contingent on the patient.
  Treatment allergy or precocious tertiarism.

IV. Reactions contingent on the drug itself.
  (1) Ether odour.
  (2) Gastro-intestinal reactions.
  (3) Vascular reactions.
  (4) Cardiac accident.
  (5) Shock-like reaction.
  (6) Nervous system reactions.
  (7) Hæmopoietic reactions.
  (8) Jaundice.
  (9) Albuminuria.
  (10) Skin reactions.

I. Local Reactions.—Infiltration of the tissues is by far the commonest local reaction. Every one of us, I am sure, is familiar with the consequences of injecting Neosalvarsan outside the veins. The best treatment of this accident is its prevention by proper intravenous technique. The injection should be stopped as soon as the patient complains of burning pain or when a swelling appears at the site of injection. It is a very bad practice to stand on grounds of false prestige and somehow try to complete the injection by giving the rest of the solution in the syringe, out into the tissues. The subsequent treatment consists of hot applications like Antiphlogistine, Ichthyol and Glycerine fomentations etc. and sedatives for the pain. Another procedure that is commonly recommended at the time of the injection, is to remove the syringe leaving the needle in situ and inject through the same needle a few c.cs. of a 10% solution of Sodium Thiosulphate into the infiltrated tissues. As early as possible, after the acute pain subsides, passive movements to the elbow should be given so as to facilitate absorption and prevent stiffness of the joint.

II. Reactions contingent on the Disease.—1. *Therapeutic shock or Herxheimer reaction*:—This is a phenomenon characterised by focal œdema and systemic and symptomatic flare-up of the syphilitic lesions. It occurs usually within 12—24 hours after the first arsenical injection. For example in the case of early syphilis, there is a rise of temperature, headache, malaise etc., which persist for 12—24 hours. The initial cutaneous rash stands out more prominently and if it is not already present, a profuse rash may be precipitated. The reaction under such circumstances is not of much importance but it is worth while, the practitioner knows about it so that he may not be perturbed when he meets with a case. In some circumstances, however, the reaction may give rise to grave consequences. These are for example, gumma of the larynx, cardiovascular syphilis and some cases of syphilis of the central nervous system. In cardiovascular syphilis, the opening of the coronary arteries may be involved and death may take place by their occlusion. In the case of gumma of the larynx, a Herxheimer effect will give rise to œdema of the larynx, impeding respiration and requiring an emergency tracheotomy.

Therapeutic shock may be prevented or minimised in treating cases of late syphilis in important viscera by using a very small initial dose of Arsenic or by a thorough preparatory treatment with Iodides and Bismuth.

2. *Therapeutic paradox*:—This is another serious phenomenon like therapeutic shock and is the result of an intensive Arsphenamine therapy in cardiovascular and other visceral syphilis. A typical example appears in the treatment of syphilitic cirrhosis of the liver. By intensive therapy, a diffuse cirrhosis is soon replaced by fibrotic healing and shrinkage in size. The result to the patient, however, is bad as this fibrosis leads to portal obstruction, ascites, œdema and probably death. In fact, the drug has killed the patient while "curing" the disease. The principle of treatment under such circumstances is to aim at slow healing so that there is time for the gradual reabsorption of the resulting fibrosis. This can be achieved by a scheme of treatment akin to that adopted for therapeutic shock.

III. Reactions contingent on the Patient.—*Treatment allergy or precocious tertiarism*:—Arsphenamine, when used in insufficient amount and dosage, especially in early syphilis, induces in the patient a state of hypersusceptibility to the treponema pallida, giving rise to an allergic type of relapse characterised by large eroding gummata in the skin, bones and nervous system. Insufficient treatment thus prevents the formation of natural immunity and leaves the patient without cure and without defence. The treatment in early syphilis therefore should be intensive and combined with heavy metal therapy and should aim at complete cure. It is better not to treat early syphilis at all than to treat it inadequately and incompletely.

IV. Reactions contingent on the Drug.—1. *Ether or garlic odour*:—Most patients experience a peculiar garlic odour within 10—20 seconds after the start of an intravenous injection. Some sensitive patients

especially women, find it disagreeable and nauseating. This can, however, be avoided by asking the patient to hold the nose tightly by the fingers and breathe through the mouth while the injection is being given.

2. *Gastro-intestinal reactions*:—This is the commonest form of reaction and may appear either immediately or 4—12 hours after an injection and is characterised by malaise, nausea, pain in the stomach, vomiting or diarrhœa. Ordinarily, they last a few hours but may rarely be prolonged for several days. These are due to faulty preparation of the patient, dietary indiscretions, constipation and errors in technique. A full stomach just before the injection is not advisable nor complete starvation before the injection is necessary. It is enough if the patient does not take any solid food for 3—4 hours before and 2—3 hours after the injection. A laxative 48 hours before the injection is advisable if the patient is particularly constipated.

TREATMENT is purely symptomatic but one should not be anxious to stop diarrhœa unless it is severe, as this is one of the channels for the elimination of the drug. If reactions of this type are mild they may be disregarded and treatment pushed through without interruption, especially in early and antenatal syphilis. If, on the other hand, they are severe and prolonged, further treatment should be by reduced dosage, by a change in the arsenical or by a temporary interruption of the arsenical phase of the treatment.

3. *Vascular reactions*:—The outstanding vascular reaction is the *Nitritoid Crisis*. In the majority of cases, rapidity of injection is an exciting factor and hence of importance in the prevention of reaction. It is very common in women and highly strung neurotic individuals. During the actual process of injecting or within a few minutes after, the patient complains of feeling hot and has an expression of anxiety and restlessness. Another important subjective symptom is suffusion of the conjunctivae which one should always look for, when dealing with susceptible individuals. If the injection is promptly interrupted at this stage, the reaction is mild and shortly disappears. If, however, it is continued inadvertantly, more alarming symptoms set in. They are: suffusion of the face, neck, lips and glottis with a sense of choking and impending death. There may be syncope with a thready pulse. Although the condition may seem alarming both to the patient and the physician, death is very rare and recovery usually takes place within about half an hour.

TREATMENT:—Stop the injection as the initial warning sign appears. For further stages of the reaction, Adrenalin Hydrochloride 1 in 1000 solution ½ c.c. intramuscularly is the remedy par excellence. One unfortunate thing is that when once this reaction occurs, it is likely to recur at subsequent injections and has to be prevented by the following methods:

(1) Proper preparation of the patient.

(2) Always inject very slowly preferably—with the patient lying down; leave the neck exposed, watch for the warning signs and stop the injection at the earliest.

(3) Do not remove the tourniquet immediately the needle is in the vein, but keep it on while the injection is being given very slowly and for a few minutes later too.

(4) Use a buffer solvent like Sodium Thiosulphate 10%, Calcium Gluconate 5%, or Glucose Saline 5% for dissolving the arsenical.

(5) Give ½ c.c. of Adrenalin 5 minutes before the injection or ½—¼ grain Ephedrine Hydrochloride by mouth once a day for one or two days previously.

If the reactions seem to persist long and prove troublesome, a change in the arsenical and the adoption of the intramuscular route are advisable.

4. *Cardiac accident*:—This is a most unfortunate accident one may come across. It comes on during the actual injection or a few minutes later and is characterized by fainting, an ashy grey pallor, profuse sweating, collapse and death. The reaction is due to a sudden ventricular fibrillation of the heart muscle which is already damaged by syphilis. This type of reaction is to be avoided at any cost by a careful preliminary examination of all patients for evidence of cardiovascular syphilis and if present by instituting a proper preparatory treatment before starting arsenic. If the reaction occurs, it is almost always fatal. Adrenalin ½—1 c.c. intravenously or intracardially may be tried. If the patient were to recover, Arsphenamine should never be given at any time.

5. *Shock-like reaction*:—Rarely, an intravenous injection of Arsphenamine is attended with symptoms just like those of surgical shock. It is supposed to be of the nature of an acute adrenal injury by the Arsphenamine. Treatment is as in surgical shock; *e.g.*, warmth, stimulants, intravenous Saline or Glucose.

6. *Nervous system reactions*:—(*a*) Hæmorrhagic encephalitis is the most outstanding and important reaction. This is a very grave but fortunately very uncommon complication. It is common in young adults and comes on after the third or fourth injection. If at all there is anything of the kind, alcoholism is the only predisposing factor. Two or three days after an injection, the patient begins to complain of headache which gradually becomes severe; the first alarming symptom which comes on rather suddenly, is a convulsion which recurs at regular intervals. The patient becomes rapidly cyanosed and lapses into a condition of coma. There is both cardiac and respiratory distress and usually death supervenes. The treatment consists of venesection and withdrawing 60—100 c.c. of blood; lumbar puncture draining the theca dry—to be repeated if necessary; Adrenalin ½—1 c.c. intramuscularly every 4 hours and Oxygen inhalations.

(*b*) Peripheral neuritis:—Here, the symptoms are very slow in their onset and occur after a number of injections; high dosage seems

to have some relation to this complication. Sometimes, however, syphilis may itself be the cause of the neuritis. In such cases, the arsenical should be given cautiously and in small doses lest the condition may become worse in which case further Arsphenamine injections have to be stopped and treatment carried on with Bismuth and Iodides.

7. *Hæmopoietic reactions* :—These are among the gravest of treatment reactions but are happily very rare. They are due to bone marrow damage involving all or some of the blood constituents—as red and white blood corpuscles and platelets. The symptoms vary and depend on the relative degree of damage to the above constituents. In general, they consist of fever, progressive anæmia, purpuric spots, hæmorrhages into the viscera and bleeding through the mucous membranes, necrotic areas on the buccal mucosa and the tonsils and a brawny œdema of the neck. The course is usually down hill with severe prostration and death usually supervenes in the course of 1—3 weeks. A blood examination will show a marked diminution in the blood platelets or complete absence or marked reduction in the granular leucocytes as the case may be.

TREATMENT is very unsatisfactory and consists of intravenous and intramuscular injections of Nuclein solution 10—20 c.c. per day ; intravenous injections of Calcium Gluconate, intramuscular injections of liver extract, hæmostatics, and blood transfusion.

8. *Jaundice* :—This is a fairly frequent complication and may set in during the course of antisyphilitic treatment or after. It may appear alone or associated with other complications like exfoliative dermatitis. The clinical picture may vary anything from simple catarrhal jaundice to the fatal acute yellow atrophy of the liver. In all cases, there is a definite damage to liver cells as is shown by functional tests.

Jaundice may be the result of—

(1) A simple catarrh of the bile passages.
(2) An intercurrent epidemic infection of the hepatic system.
(3) Hepatitis as a result of syphilis itself, or
(4) Liver damage by the Arsphenamine.

Fortunately, acute yellow atrophy, which was very common in the Salvarsan days, is very rare with the present-day Neosalvarsan.

TREATMENT :—Stop all antisyphilitic treatment ; give about 7 c.c. of 10% Sodium Thiosulphate solution intravenously for 2 or 3 days if the last injection of Arsphenamine has been given recently. Calcium Gluconate 5% and Glucose 20% may also be given intravenously. In addition to the above and the usual treatment for jaundice, we have found Decholin by mouth or parenterally very good.

If this complication were to occur in early syphilis, treatment may be continued with Bismuth and Iodides. In late syphilis, however,

it is better antisyphilitic treatment is suspended altogether. After jaundice has subsided, treatment may be resumed with Bismuth and Iodides. After an interval of say about 3 months after the jaundice, in a great majority of cases it would be safe to resume Arsphenamine therapy. It is better to start with very small doses, preferably using a buffer solvent like Sodium Thiosulphate, Calcium Gluconate, Glucose Saline or better still a 20% solution of Decholin, and the condition of the liver watched. The dose is to be gradually increased and if nothing untoward occurs, treatment is continued with the usual therapeutic dose. If there is recurrence of jaundice, Arsphenamine has to be completely abandoned and treatment should mainly be by Bismuth and Iodides. It may be mentioned here that Neosalvarsan, administered dissolved in Glucose or Glucose Saline, is supposed to have an increased spirochæticidal action and that, contrary to popular belief, Sodium Thiosulphate solution used as a solvent does not reduce the action of the drug.

9. *Albuminuria* :—The toxic effects of Arsphenamine on the kidneys may be said to be practically nil. Following an injection there is, however rarely, a transient albuminuria with a few casts—a condition which goes by the name of "treatment nephrosis" and which promptly clears up when the drug is withdrawn. Even under such circumstances, it is very difficult to say how far Arsphenamine is responsible for the albuminuria as it may be due to the heavy metal in the usual dual therapy. Nevertheless, under certain circumstances, notably exfoliative dermatitis or bone marrow damage, there may be evidence of grave renal damage like acute hæmorrhagic nephritis—a reaction which is fortunately very rare.

10. *Skin reactions* :—The Arsphenamines are capable of producing a wide variety of reactions in the skin ranging from a simple pruritus to the pucca exfoliative dermatitis. The minor reactions consist of pruritus, urticaria, erythematous or scarlatiniform rashes, herpes, fixed arsenical exanthemata etc.

Pruritus by itself is not of much importance but it may be the forerunner of more serious trouble. Urticaria, which may be local or general, is of the nature of a nitritoid crisis and is quickly relieved by an injection of adrenalin. It is, however, likely to recur after subsequent injections, and if very troublesome, a change from one arsenical to another will obviate the trouble. Herpes also is a milder affair and is treated by auto-hæmotherapy or injections of liver extract.

Fixed Arsenical Exanthemata.—In this condition, after an injection of Neo-Arsphenamine, the patient develops one or two patches of dermatitis which flare up everytime a subsequent injection is given and then subsides in two or three days. This is not likely to go in for generalised dermatitis, but the patient should be carefully watched every time the injection is repeated.

Exfoliative Dermatitis.—This is one of the serious cutaneous reactions to the Arsphenamines and unfortunately more common than

the other serious reactions. It usally occurs after the third or fourth injection but in the true idiosyncratic variety, it may set in after the very first injection. It has been suggested that infiltration of the skin by small quantities of arsenic due to faulty intravenous technique may sensitise the patient and precipitate an attack of dermatitis.

The attack is usually preceded by certain warning symptoms such as localised or generalised itching, some localised areas of slight redness with a peculiar goose skin appearance due to the hair follicles standing out prominently. We have particularly noticed this second phenomenon and have aborted a number of cases by early recognition, stoppage of further arsenical treatment and institution of energetic abortive treatment. It is important to recognise this very early premonitory symptom, as otherwise, one may continue further injections of Arsphenamine and court disaster.

Clinical Features:—Owing to its being commoner than the other reactions, I propose to deal with this reaction in a little more detail. Usually, within 24 hours after the last injection, a maculo-papular eruption occurs, often limited to the face and the flexors of the extremities but rapidly spreading to the whole body. There is severe itching and the skin becomes swollen. In the milder cases, the reaction may stop at this stage. In severe cases, however, a number of small vehicles appear; they burst and ooze, the exuded serum drying up and forming crusts. Associated with this, there is marked prostration, fever, renal and cardiac damage and in more unfortunate cases, there is an associated jaundice. Evidence of damage to bone marrow also has been reported but we never came across a case in our series. Secondary infection of the skin with staphylo or streptococci, bronchopneumonia are also other complications. The course is usually 6—8 weeks. The generalised swelling gradually disappears and the skin becomes normal after the superficial layers exfoliate.

TREATMENT:—In view of the serious nature of the complication, the preventive aspect of the treatment assumes a great importance. Persons with unhealthy skin especially eczema and seborrhœa, asthmatics, alcoholics and vagotonic individuals are more likely to go in for dermatitis. Onset of repeated gastro-intestinal or nitritoid reactions during the course of antisyphilitic treatment should be looked upon as a warning sign. Such individuals must be carefully watched, specially questioned whether the previous injection has produced any itching and the condition of the skin carefully scrutinised on the slightest doubt.

On the first appearance of premonitory symptoms, stop all specific treatment, put the patient to bed to avoid chills and exposure. Give about 7 cc. Sodium Thiosulphate 10%, mixed with 5 cc. Calcium Gluconate 5%, or better still 10 cc. of 10% Calcium Thiosulphate (Ametox-May & Baker's) intravenously and also 5 cc. of Liver Extract intramuscularly. Order a saline laxative, put the patient on Alkalis, Calcium and Glucose by mouth and apply plenty of dusting powder for the whole skin. Continue the above treatment for 3 or 4 days and if you are lucky, the attack may be aborted.

For a fully developed case, attention to the following is necessary.

Careful nursing:—Keep the bedding clean and frequently changed. Prevent chills and exposure, bedsore and hypostatic pneumonia.

Dieting:—Nutritious liquid diet, liver curry or soup. Avoid alcohol and spiced foods, in fact everything that stimulates cutaneous circulation is to be avoided.

After three or four doses of Sodium Thiosulphate, it is not necessary to repeat the same. Continue the intramuscular injections of Liver Extract on alternate days till the symptoms subside. Alternating with Liver Extract give 3—5 c.c. of Vitamin C (Cantan, Redoxon etc.) intramuscularly. When oozing and crust formation have started, give starch baths to the skin daily and dust the whole body with a bland dusting powder. Support the heart with Digitalis etc., and treat the complications as they arise. For the secondary infection of the skin, we have found a course of Uleron to be very good.

Subsequent management of the specific therapy:—An attack of exfoliative dermatitis makes the patient sensitive to further arsenical therapy, the sensitivity unfortunately lasting for many years or even for life. As long as this sensitivity lasts, no Arsphenamine should ever be given and further treatment should be only by Bismuth and Iodides. The presence or absence of sensitivity may be tested by what is known as the "patch test". Even if the test is negative indicating that the patient is not sensitive to Arsenic, it is better further treatment with Arsenic is entrusted to a specialist.

From a careful review of the various reactions mentioned above, one can gather that the treatment of many of them is mainly preventive. No doubt, reactions like aplastic anæmia, hæmorrhagic encephalitis, acute yellow atrophy of the liver etc., are definitely due to idiosyncrasy on the part of the patients and are totally unpredictable. However, one should not be too anxious to attribute each and every reaction to idiosyncrasy.

Individuals vary in the susceptibility of their various tissues to Arsenic and in their power to eliminate the drug. The first requisite for the intelligent use of modern syphilotherapeutic drugs, therefore, is an adequate preliminary examination of the patient and a study of his response to treatment from time to time. First of all, it is essential to know what damage syphilis has already done. Syphilis is a disease which may affect each and every tissue of the body and the type of treatment will obviously depend on the organ and the system affected. An adequate examination is also necessary to detect the presence or otherwise of associated conditions and diseases which may necessitate modification of the line of treatment. In the examination of the patient, it is of importance to look for evidence of cardiovascular and neurosyphilis as they have a definite bearing on reactions like therapeutic shock, therapeutic paradox and cardiac accident.

In addition to the above, a study of the following factors will help in the appraisal of a case from the point of view of reactivity.

1. Age and Sex : Complications tend to increase with the age of the patient. Women generally are more reactive to treatment and also call for a relatively lower dosage.

2. Patients on the verge of starvation, cachectics, those with infections like tuberculosis and diabetes, etc., and vagotonic individuals are all less tolerant than others.

3. A high carbohydrate diet with low fat and protein intake and also alcoholism afford maximum susceptibility to liver damage.

4. Nervous states such as worry, anxiety, fear, etc., tend to increase reactivity.

5. Pregnancy which already throws an increased eliminative load makes the patient susceptible to minor reactions and therefore, call for careful adjustment of dosage, etc.

Next to the study of the individual patient, the attention to modern methods of technique is important. Most reactions arise not from the drug but from errors in procedure. Unfortunately, much of the technical detail is not appreciated by the average practitioner. I would, therefore, like to purposely emphasise some of the seemingly minor points of technique.

1. *Dosage* :—The adoption of a universal dosage for every case without regard for the weight, sex, age, etc., of the patient is too common a mistake. Likewise, adopting the text book doses as given in English text books is another error. The initial dose should always be modified by a consideration of the general condition of the patient, the special structure involved and the extent of the damage therein. It should particularly be small when an Herxheimer reaction or therapeutic paradox is expected.

2. *The solvent* :—Cold sterile double distilled water must be used for dissolving the Arsphenamine. Taking a quantity of distilled water from a 1 lb. or 2 lb. bottle and just boiling it by means of a spirit lamp before use is a very common practice with many of the practitioners and has everything to say against it. It lacks freshness and repeated exposure of the stock bottle to air increases the chances of contamination. Just boiling it over a spirit lamp is too inadequate a sterilisation. Further, you may not have the patience to wait till the water becomes absolutely cold, and dissolving Arsphenamine in warm water increases its toxicity. Most of the rigors and fever after an injection are invariably attributable to faults in the water. Therefore, sterile double distilled water put up in 10 c.c. ampoules will obviate all the above difficulties and will answer the purpose well.

3. *Inspection of the ampoule* :—If the ampoule is cracked, or the powder discoloured or found clumping and adherent to the sides, it should be discarded. When going to give an injection outside your dispensary, always open the carton beforehand and inspect the contents of the ampoule. Otherwise, you are liable to cut a sorry

figure or you may be tempted to use a doubtful stuff which you would not have used if you had another tube at hand.

4. *Preparation of solution* :—Dissolving the drug, holding the syringe with the solvent at a distance and squirting it on the powder to produce a froth thoroughly ærates and oxidises the drug to a great extent. This is a very common practice that is generally seen and deserves to be strongly condemned. The proper method of hastening solution is by gently aspirating and injecting into the ampoule with the tip of the needle always below the level of the fluid in the ampoule, thus avoiding frothing.

5. *Rate of injection* :—Most of us inject too rapidly. There may be some excuse if the injections are given rather quickly in a large hospital clinic where time is an important factor in treating a large number of patients. But in ordinary private practice, there is neither the need nor the justification in giving it "tuff" like an hypodermic injection. A recognised safe rate is about 2—3 minutes for a dose of 0.3 or 0.45 grm. Rapidity of the injection to a great extent contributes to the occurrence of nitritoid crisis. A fool-proof method of checking speed is to always use a record syringe with a small bore needle.

6. Before injecting, it is important to wipe the outside of the needle free from the Arsenical solution by means of a spirit swab. Otherwise, a drop or two of the solution sticking to the outside of the needle will be deposited intradermally. This is supposed to sensitise the patient to Arsenic and the next Arsphenamine injection will precipitate an attack of exfoliative dermatitis.

Just a mention of the various commonly used Arsenicals from the point of view of producing reactions, may not be out of place here.

Trivalent Arsenicals.—The two commonly used Neo-Arsphenamines in our parts are Neosalvarsan and Novarsenobillon. Both are one and the same drug with the same chemical formula but you will note that they both differ slightly in their physical properties. I need not tell you that Neosalvarsan is prepared from the original formula of EHRLICH.

Mapharside.—This has been recently introduced into this country and is a comparatively stable preparation unlike the Neoarsphenamines. The solution does not undergo any toxic change on agitation or on standing even for some hours and when infiltrated into the tissues by faulty technique, is not so painful. It has been observed that the immediate minor reactions to the drug are more frequent than with Neoarsphenamine, while the delayed and more serious reactions are remarkably few. One peculiar feature about the drug is the occurrence of vein spasm. Immediately after an injection, the patient complains of a severe pain shooting up and down the arm; it lasts for 1—2 hours but is relieved by cold compresses. This can, however, be completely avoided by injecting the solution very rapidly

in 15-20 seconds or by allowing the solution to stand for a few minutes before the injection.

Solusalvarsan.—This is a Salvarsan preparation put up in ready made 10% solution for Intramuscular injection. Ready made solutions are likely to become toxic after a period of time. The colour of the solution is light orange and slight changes of colour indicating its toxicity are difficult to detect. The solution may keep well in cold climates but in the tropics however, they are certainly more likely to become toxic unless perhaps kept in cold storage.

There has been recently put up in the market, a similar preparation in ready made solution form. Although we have not personally used the drug, a number of cases of severe jaundice and exfoliative dermatitis with a few deaths have come to our notice. In this connection, I would like to strongly urge every practitioner not to be easily tempted and led away by seductive advertisements and perhaps a few sample tubes and try each and every sundry Arsenical put up in the market. It is not possible for a busy general practitioner to evaluate for himself the merit of a new preparation. You will be well advised therefore to stick up to such drugs which have stood the test of time and strict toxicological and therapeutic control.

Sulpharsphenamine Group.—In America at least, drugs belonging to this group are greatly dreaded. STOKES found that the incidence of exfoliative dermatitis was 1 in 700 as compared to 1 in 4,500 for Neoarsphenamine. He further says that he has never seen a case of aleukæmia hæmorrhagica until he used this drug. All his cases of purpura were due to this. Four of the six fatal cases of hæmorrhagic encephalitis were due to Sulpharsphenamine in a series of 80,000 injections although a relatively small number of injections of Sulpharsphenamine were given. STOKES finally concludes that it is too dangerous a preparation to be recommended. Although these drugs are not viewed with so much disfavour in this country, we feel their use should be limited to infantile congenital syphilis and to those intolerant to intravenous Arsphenamine therapy. Children, however, seem to tolerate them well.

Pentavalent Arsenicals.—*Stovarsal and Spirocid*:—These are one and the same preparation but under different trade names. They are not much used in this country in the treatment of syphilis. In adults, there is nothing much to recommend their use as the margin of therapeutic safety is very small. Children, however, seem to tolerate them well; this fact coupled with the ease of administration orally, justifies their use with favour.

Acetylarsan.—This is a derivative of Stovarsal in ready made solution form, put up in two strengths—one for adults and the other for children. We have had some experience of the drug. Children tolerate it well and when given even subcutaneously, it is painless and free from any untoward effects. In the case of adults, however, we have found that it is inferior to Neo-Arsphenamine but may be of use in cases intolerant to the latter drug.

Tryparsamide.—Although it is relatively poorly treponemicidal, it has a remarkable ability to penetrate nervous tissues and is therefore, the drug of choice in neurosyphilis. It is singularly free from the various reactions associated with the trivalent preparations although such reactions are not unknown. The drug is, however, neuro-toxic and the danger of optic nerve damage should be constantly kept in view. It should never be used in the case of pregnant women as the effect of the drug on the optic nerve of the unborn child is not definitely known.

Conclusion.—"A turn of the wheel of inventive fortune may introduce us to the millenium of an infallibly preventive and curative pill for syphilis". But at least till such time to come, the complexity of the therapeutic problems of the drugs like the Neo-Arsphenamines continue to exist, while the treatment of syphilis will remain an art and will not consist merely of shoving a few syringe fulls of the yellow stuff into the veins and pushing a few doses of the black stuff into the buttocks.

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Chloasma*

BY

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Synonyms.—Liver spots; moth patches; melanoderma. In chloasma, there is pigmentary disturbance resulting in diffuse discoloration of the skin, or there may be macular lesions of various sizes and shapes, and of a yellowish or brownish colour.

Symptoms.—In the localised variety, the pigmented parts are round or oval in shape and with an ill-defined border. The change of colour is the only noticeable feature.

In the circumscribed type—the face—usually the fore-head and the malar prominences—are the sites of election; although any part—even the mucous membrane-may be affected.

The patches vary in colour from a faintly yellow to a darkish brown. They give rise to no subjective symptoms.

In the diffuse variety, the discoloration may be very extensive—or even universal. The discoloration is more pronounced in regions

* Specially contributed to 'The Antiseptic'.

which are usually dark as the axillæ, nipples and the genitalia. The chloasmic lesions may either be idiopathic or symptomatic in character.

The idiopathic form is due to the action of some external factor, such as heat, (as is the case in the erythema) pressure and friction (from hernia-truss or other surgical appliances), trauma (as in severe and incessant scratching in pediculosis or pruritis), actinic heat or light rays (from the sun or arc lamp), X-rays,. and from chemical irritants (especially Cantharides, Mustard and Croton oil). The pigmentation usually is at the site of irritation but sometimes it extends much beyond it. In symptomatic type, the lesions appear as a result of pregnancy or some constitutional disorder, or from general intoxication. The most common type is associated with disorders of utero-ovarian system and is known as "Chloasma-Uterinum". The lesions generally show themselves on the face, fore-head—and occasionally on the other parts of the body—and the nipples.

The conditions (due to systemic or organic diseases) causing the pigmentation are Addison's disease (most characteristic accompaniment), chronic malaria, secondary syphilis, tuberculosis, hypertrophic cirrhosis of the liver, cancer, rheumatoid arthritis etc.

Ætiology.—The ordinary type of chloasma is usually unassociated with any demonstrable pathological condition. The greatest number of cases are found in adult females, suggesting the endocrine disturbances about the menopause, acting as a factor. The chloasma in pregnancy can also be attributed to the same endocrine disturbances.

Prognosis.—The utero-ovarian causes are usually persistent. In chloasma occurring as a sequelæ or concomitant with other skin disorders—the lesions are rarely permanent in character.

Treatment.— Wholly depends on the causative factor. A thorough and careful examination in order to find out the exciting cause is necessary. The pigmented areas may temporarily be removed by the use of scaling solutions. The most useful one is a mixture of Mercuric Chloride (1 part), Alcohol (25 parts) and water (74 parts) to be painted on several times a day until a mild degree of desquamation occurs.

A saturated solution of Acid Salicylic in Alcohol is also used. Lactic Acid, Phenol, Resorcin paste (10%), Hydrogen Peroxide can also be locally used. Chloasma of pregnancy is likely to subside with the termination of the same. The diseased ovary or uterus may be surgically dealt with.

Vitamins B and C orally or by injections may also be prescribed with advantage. Endocrine preparations *e.g.* poly-glandular extracts, complex (A and C) etc. may be also used alone or in conjunction with vitamins.

Steinach's Ligature II for Senile Hypertrophy of Prostate*

BY

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Introduction.—Urethra tunnels its way through the prostate and thus becomes involved in the circumstances of the prostate. Senile enlargement of prostate would have been of no more importance than a simple superficial enlargement and would have often passed unnoticed and unknown but for its peculiar relations with urinary passage. White hair and hard pulse herald the approach of old age and enlargement of prostate confirms its establishment. This senile hypertrophy of prostate is a constant menace in old age. European statistics show that 38% of men aged 60 years and upwards suffer from the prostatic syndrome. This proportion does not hold good for all races and all countries. In China, prostatic hypertrophy is hardly seen. In India too, it cannot be considered so common as in Europe. This may be accounted for partly by the short span of life in these countries.

Historical Survey.—In Ayurved (SHUSRUTA), we get the oldest description of hypertrophy of prostate. It is as under :—

Vatashthila :—The deranged and aggravated bodily Vayu incarcerated or lodged in the region lying between the bladder and the anus gives rise to a thick lumpy tumour like a pebble (Ashthila) which is hard and non-shifting in its character producing suppression of stool, urine and flatus, distention of abdomen and pain in the bladder. It is known as Vatasthila.

To Western medicine, the disease does not seem to have become known till the 16th century. The first rational attempt to relieve the terrible sufferings due to the disorder was in 1884. On observing the atrophied condition of prostate in eunuchs and castrated animals, it was thought that castration would be a remedy for the disease. LANNOIS was the first to introduce the operation. The pain and misery due to the disease are so severe and intolerable that the sufferers submitted even to this kind of drastic, crude and unæsthetic remedy to get relief. LANNOIS performed many operations but the psychological reaction was so revolting that the remedy was found to be worse than the disease and soon passed out of practice. Attempts were then made to obtain the results of castration without performing the hated operation. In 1893, HARRISON introduced section of vas deferentia and later BIER suggested ligature of testicular blood vessels. The immense improvement in surgery due particularly to the discovery and use of anæsthetics and aseptics, made many operations possible which could not be done formerly. The disease is now

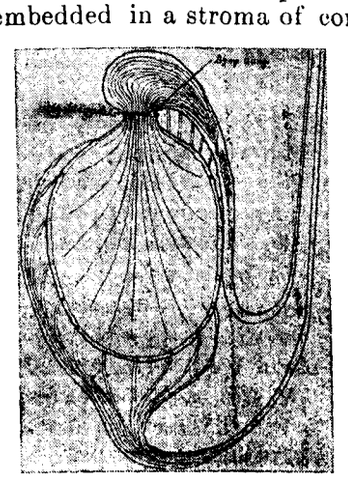
* Specially contributed to 'The Antiseptic'.

radically treated hy wholesale removal of the prostate. But this bold remedy does not finally solve the problem. The prostatic patients are generally in a very delicate condition of health, and operation on them is always risky. Research is, therefore, still continued to find out a safer remedy. ROMMES' success in relieving prostatism by implantation of a testicle of a young man revived the exploration of physiological methods in surgery.

Success of these operations was explained by adjustment of testicular secretion. It is now possible to prepare all the different kinds of hormones present in testicular secretion. These hormones are recommended on the basis of the probable theories in favour of each type. But these theories have still to be confirmed. When we shall be able to ascribe this pathological change to the deficiency of particular hormones, all we shall have to do will be to supply the needed hormones.

Structure and Life History of Prostate.—To understand the rationale of this operation, it is essential to know something about the structure and life history of prostate and the effects of testicular secretion on it.

Prostate is a complex gland composed of tubular gland tissue embedded in a stroma of connective tissues and unstriped muscular tissue. It is perforated by urethra and ejaculatory ducts and contains the prostatic utricle. Prostatic utricle or uterus masculinus is developed from the united lower ends of the mullerian ducts and is, therefore, homologous with the uterus and vagina of the female. It is of the size of the chestnut at puberty when it attains its normal size.



1. Animal experiments have shown that prostate atrophies of testicular secretion are stopped either by complete removal of both testes or by action of radium or X-rays on testes or by ligature of testicular vessels.

2. Uncontrolled action of secretion of interstitial cells of Leydig lead to hypertrophy of prostate. Steinach's operations are founded on this theory.

3. If secretion from germinal epithelium and that from cells of Leydig are well adjusted, prostate remains of the normal size.

4. *Effect of hormones* :—(*a*) Male hormone stimulates the normal development of the prostate; (*b*) Female hormone causes proliferation of prostatic tissues; (*c*) Prolan gives rise to the proliferation of glandular tissue of prostate.

In man also, the hormone of male sex glands regulate the development, preservation and functions of all the necessary glands

including prostate. The relation between the testes and prostate is conclusively proved.

The normal secretion of the interstitial cells of Leydig contributes to the normal development of prostate. If it is absent due to anomaly or disease or absence of testes, prostate will fail to develop. Upto puberty, this secretion stimulates the growth of prostate, but then the germinal epithelium becomes active and exercises a controlling effect on the action of the secretion of Leydig cells. The prostate retains the same chestnut size till both these secretions are counter-balanced. In old age, secretion of germinal epithelium diminishes and the secretion of Leydig gets an upper hand and prostate again begins to enlarge.

The female follicular hormone which is present in testes also stimulates the growth of prostate. Its effects are counter-balanced by the hormone of the germinal epithelium. In old age, the latter is diminished and the former is maintained at the same level. Thus, the physiological equilibrium between testicular and follicular hormones is upset and the effect of female hormone becomes prominent and marked. The pituitary prolan has a stimulating effect on the prostate which effects will be marked only if the controlling hand effects of germinal epithelium is removed. Thus, on losing the activity of germinal epithelium, the man not only loses his manly power but becomes a victim to many pathological conditions.

Prostatism —Prostatitis with its tortures is one of the worst enemies of men in old age. Urinary disturbances make the life tedious, tiresome and a positive nuisance to himself and others: mental condition is often upset and if eroticism with abnormal passions becomes a prominent symptom, the old man becomes a shameful burden to himself and the society.

Treatment.—We have seen that the latest surgical treatment—that of rational operation—is very risky. Even in selected cases, mortality is heavy. Prostatism, therefore, still remains a thorough problem and research still continues in the hope of discovering a safe remedy. The following methods are in use at present: (1) The local injections of Mercurochrome in the prostate—the results are not at all satisfactory. (2) Pepsin—Pregnyl injections—PAYER is a great advocate of this method of this injection in the prostate.—(3) Injections of male hormone (Hombreol)—improvement lasts for a few months. (4) Transplantation of active testis. There is difficulty of obtaining the desired supply of testis. (5) Deep X-ray Therapy—Rapid proliferation of cells is checked in some cases. (6) Steinach's ligature I—Results were not so satisfactory as expected. (7) Steinach's ligature II.

In 1928, DR. PAUL NIEHANS M.D., of Zurich, modified Steinach's operation I by applying the ligature to the efferent ducts where they emerge from the testis at the level of the head of the epididymis. The results were very encouraging. He has treated more than 600 cases with satisfactory results. When he visited our hospital in Jamnagar, he explained the rationale, simplicity and success of his method of treatment. He gave me all the literature he has published

on the subject. On being convinced of the utility of this method, I tried it on ten cases and all the ten cases have been profited to an appreciable extent by the treatment.

DR. PAUL NIEHANS believes that this brings about the maximum increase in the internal secretion of the testes. The germinal epithelium revives and there is readjustment of secretion of the interstitial cells of Leydig and that of germinal epithelium and the prostatic growth is controlled.

LANDAU and HEITZ-BOYER are of the opinion that as the ligature is tied in the neighbourhood of a sympathetic ganglion, situated on the under surface of the epididymis, the action of ligature is of a reflex nature on the prostate. DR. PAUL NIEHANS believes that the action is through the endocrine system.

Description of the Operation.—"Steinach's ligature II must not be confused with section of the vas deferens. A double silk ligature placed close to the head of the epididymis precisely at the spot where E. LANDAU found the sympathetic ganglion surrounding and entirely obliterating the fifteen efferent ducts without injuring any of them and taking care of the blood vessels in the vicinity and without wrinkling the albuginea when tying the knot, has given the most efficacious results. In order to operate most exactly, I use diaphanoscopy carried out correctly under local anæsthesia. The ligature is free from pain and harmless even in the advanced age. The mortality is nil.

Clinical Notes of Ten Cases.—All the cases were above 60 years of age. One patient was 85 years old. All were admitted in the hospital for symptoms of urinary obstruction. The prostate was enlarged to more than double the normal size. The operations were performed under local anæsthesia. Median scrotal incision was made and each testis was taken out in turn and ligatures applied. During the first week the symptoms of difficulty of micturition disappeared generally on the fourth or the fifth day and during third week, the prostate became softer and smaller. The patients were discharged at the end of the month with no urinary symptoms. The prostate remained somewhat bigger than the normal size. Three cases are under observation after the operation and no recurrence of symptoms has occurred in eight months. The author says that the rejuvenating effects are marked after the operation. I was not able to notice any rejuvenating effects in this series.

Conclusions.—The number of cases is too small to announce any definite opinion but as there are a number of cases in this country, who, though undergoing daily sufferings of prostatism, are not fit or willing for major operations, can be given the benefit of this milder but more rational method of treatment.

Before undertaking greater surgical risk of prostatectomy, it would be better if the patient is given a trial of this treatment.

I have to thank my assistants DRS. H. N. TOLIA and K. M. JHALA for rendering me the valuable help in furnishing the necessary clinical records.

Pleuroclysis*

BY

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PLEUROCLYSIS or pleural lavage is irrigation or washing out of pleural cavity.

Anatomy.—For the purpose of pleural washing, it is important to note the lines of reflections of pleura.

1. On the right side, the lower border of pleura crosses the 7th sterno-costal articulation; the 8th costo-chondral junction in the mammary line; the 10 rib in the mid-axillary line, and is prolonged thence to the spinous process of the 12th thoracic vertebra.

2. On the left side, it follows a slightly lower level.

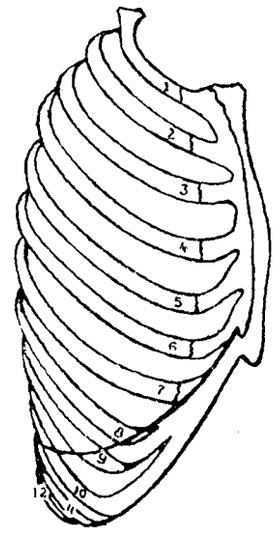

Fig. 1.
To show the inferior limit of pleura on the right side.

The inferior limit of the pleura is in a considerably lower level than the corresponding lung, but does not extend to the attachment of the diaphragm, so that below the line of reflection of the pleura from the chest wall on the diaphragm, the latter is in direct contact with the rib cartilages and the internal intercostal muscles.

Indications.—1. Empyema of the chest, *i. e.*, suppuration in the pleural cavity due to pleurisy, traumatism, spontaneous pneumothorax etc.

2. Persistent pleural effusion after artificial pneumothorax.

Technique of Pleural Lavage.—1. *Pre-operative preparations*:—Sedatives may be required in nervous patients at the time of first washing. For this purpose, Liquor Morphine m. xv may be given about half an hour before operation. Patient should be instructed not to move after the local anæsthetic is given, and that he should not cough during the operation. If there is persistent cough, it is advisable to administer a cough sedative such as Syrup Codein 3 i, before the operation.

Patient should be seated upright with his elbows supported on "cardiac table" which may be rolled into position over bed or operation

* Specially contributed to 'The Antiseptic'.

table. The " cardiac table " is of such a height that when rolled into position over the bed, a dyspnœic patient may support himself so as to use his accessory muscles of respiration efficiently.

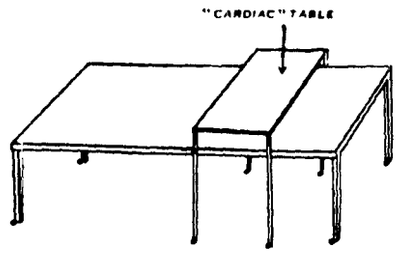

Fig. 2.

If the patient is not strong enough to sit up, he may lie down on bed or a table with the affected side protruding near the edge and the healthy side slightly raised by putting a pillow underneath. The arm and shoulder may be supported by an assistant so that the patient may not fall down.

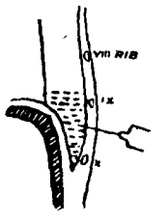

Fig. 3.

2. *Diagnostic puncture* :—Localization of the inferior limit of empyema may be made under an X-ray examination. A diagnostic puncture should always be made in the lowest part of the fluid. If no fluid appears, other spots slightly above may be tried, as the lowest part of the costo-phrenic sulcus may get obliterated on account of adhesions or organization of fluid.

From the diagnostic puncture one can find the nature of the fluid, the thickness of chest wall and the depth of the pleural space.

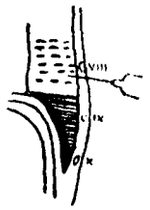

Fig. 4.

3. *Local anæsthesia* :—1 % Novocaine solution is used for local anæsthesia. It takes about 5 minutes for the part to become completely insensitive. About 2 c. c. of Novocaine solution is taken (preferably in a 2 c.c. syringe). First, a wheal is produced by intradermal injection of a small quantity of solution, then the needle is inserted slowly injecting the fluid in its passage. Then piston is withdrawn to see if any fluid is coming and the needle is removed.

More Novocaine is injected preferably with a 5 c.c. syringe. Generally, it is not necessary to insert more than ¾ of an inch of the needle, to reach the pleural cavity.

By practice, one can feel the needle piercing the pleura and also the entry into the pleural cavity.

The nature of the fluid is determined by examination of the fluid withdrawn and the thickness of the chest wall is estimated from the length of the needle put in.

4. *Aspiration and washing*:—The aspiration and washing of the pleural cavity is done in one of several ways :

(1) Aspiration needle is attached to a 10 c.c. or 20 c.c. syringe and pierced through the anæsthetised tract. Pus is aspirated. Leaving

the needle in its place, the syringe is detached and pus emptied into a basin. This is repeated several times till all the pus is removed.

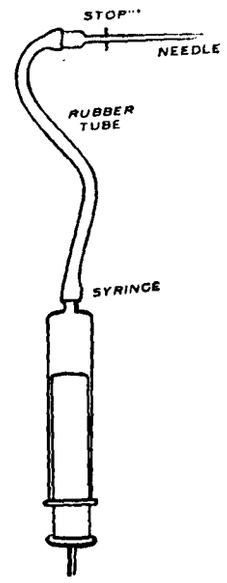

Fig. 5.

When all the pus is removed, suitable lotion is injected into the pleural cavity with the same syringe. Repeating this process several times, the pleural cavity is washed.

This method has many disadvantages. Constant movement of the needle may result in injury to the lung, repeated punctures of pleura, and enlargement of the needle track, through which a sinus is likely to form.

(2) Instéad of connecting the syringe directly to the needle, a stiff rubber tubing may be intervened. Rubber tube can be clamped before disconnecting the syringe, so that no air will enter. There is no movement of needle that may cause injury to the lung, pleura or chest wall.

It is preferable to use a " stop-needle ", that is, a needle with a shoulder that prevents it from being plunged in more than a certain distance.

(3) The trouble of detaching the syringe from the rubber tube is saved if a 3 way stop-cock is available. The cock is so turned that syringe can be filled with pus, then it is turned at right angle and the pus is expelled into a basin.

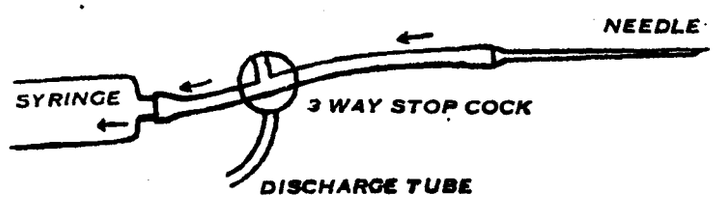

Fig. 6.

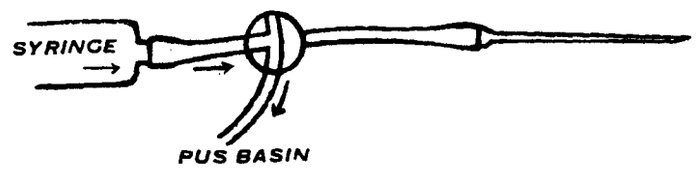

Fig. 7.

When all the pus is removed, lotion is injected into the cavity. The discharge tube is now dipped into a lotion jar. Lotion is sucked into the syringe and then, after turning the stop-cock, it is expelled into the pleural cavity. By repeating the process the pleural space is washed.

In all these cases, the intra-pleural pressure is determined by a second puncture somewhere above the fluid level.

(4) Two-puncture method :—Trocar and canula is pierced at the lower level of the fluid and pneumo-thorax needle is passed at some upper level where there is no fluid.

Air is injected and the increased pressure displaces the pleural fluid. Then the lotion is injected from the upper puncture and allowed to pass out from the lower puncture by again injecting air. By repeating this process, the pleural surfaces are washed.

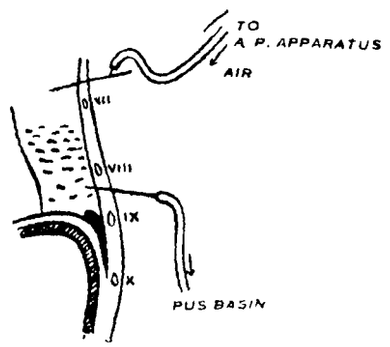

Fig. 8.

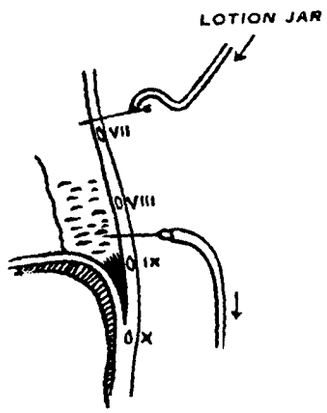

Fig. 9.

This procedure can be used only when the pus is in a large cavity. Even then, it has the disadvantage of making two punctures, which may not be communicating on account of adhesions.

(5) DIEULAFOY's aspirator consists of a glass cylinder with a piston and having two openings—one for the trocar and canula, the other for the discharge tube.

(6) POTAIN's trocar and canula contains a side opening to which is connected a discharge tube.

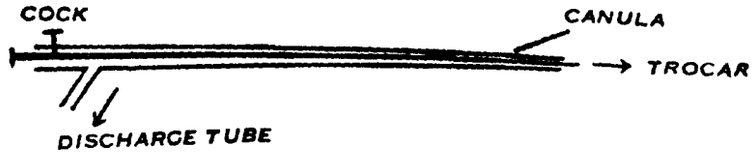

Fig. 10.

The pus is aspirated into the pus bottle with an exhaust pump. When all the pus is aspirated the rubber tubing going to the

pus bottle is detached and one from the lotion jar is connected to it.

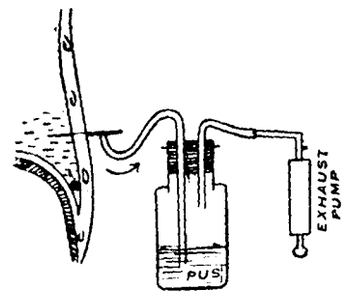

Fig. 11.

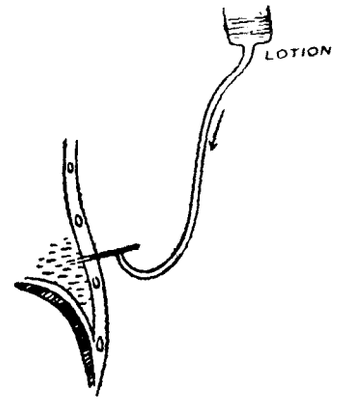

Fig. 12.

(7) MATSON's Apparatus consists of a 3 way cock which is connected to a 100 c.c. Leur syringe. A 13-gauge needle is used which is attached to a glass 'observation tube' of the same calibre and this is connected to a 100 c.c. syringe by means of a rubber tube.

To illustrate Matson's Apparatus for Pleural Lavage.

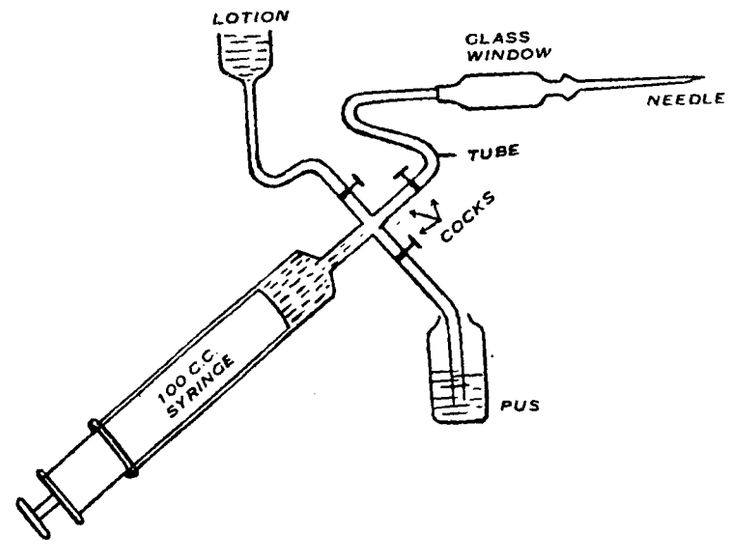

Fig. 13.

With every stroke in and out, 100 c.c. of pus is aspirated and air injected in its place. When all the pus is removed, air is aspirated and lotion is injected. The process is repeated till pleural cavity is thoroughly washed.

(8) MORELI's Apparatus :—The Potain's trocar and canula are used and also the exhaust pump and the pus bottle. Between the pus bottle and the canula, a 3 way stop-cock is attached. The three

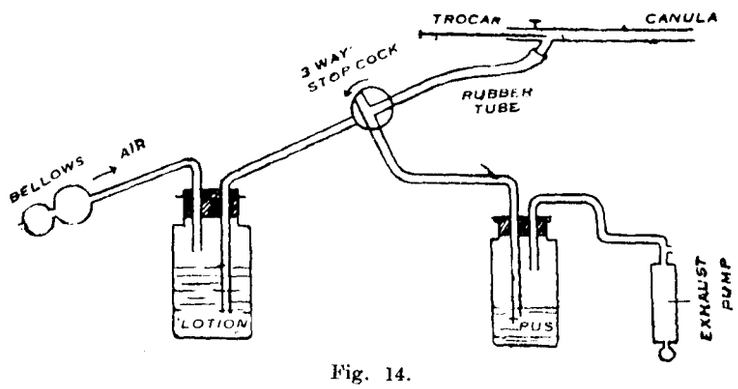

Fig. 14.

connections are: (i) to the canula ; (ii) to the pus bottle and (3) to the lotion bottle. Rubber bellows connected to the lotion bottle pump the lotion in.

The three way stop-cock is so turned that the fluid from the canula can flow into the pus bottle. The pus is aspirated and then the three way stop-cock is turned at right angle so that the lotion can flow into the pleural space and the lotion is pumped in. By repeating this process, the pleural cavity is thoroughly washed. In all these cases, the intra-pleural pressure may be measured by connecting the mano-meter of the pneumothorax apparatus to the canula.

It is convenient to have another 3 way stop-cock near the canula, one end of which is connected to a pneumo-thorax apparatus.

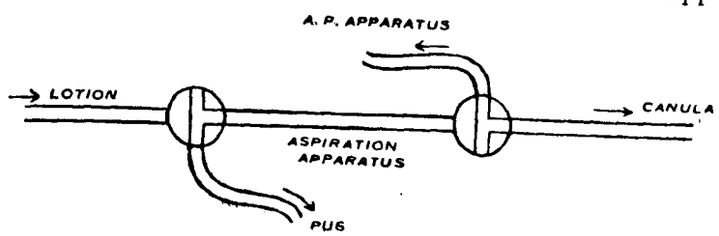

Fig. 15.

Instead of two 3 way stop-cocks, a four way cock may be used. The fourth pipe connects a pneumo-thorax apparatus, so that intrapleural pressure may be noted at any time.

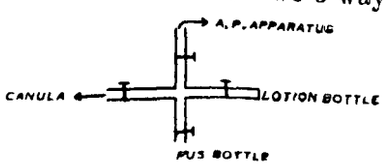

Fig. 16.

Lotions to be used.— Various lotions are used. They should be

slightly warmed before injecting into the pleural space, by placing them in hot water.

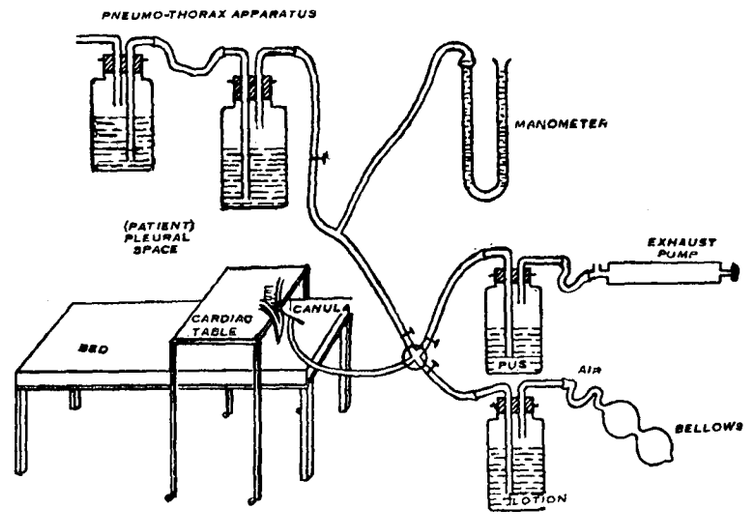

Fig. 17.

Illustration to show complete Apparatus for Pleural Lavage.

1. *Iodine lotion* :—Iodine gramme one, Pot. Iodide grammes two, distilled water 40 c.c.—5 c.c. of this is used with 100 c.c. of water.

2. Dakin's solution is sometimes used. It dissolves necrosed tissue. It should be prepared fresh. Sometimes, calcium deposits are formed in the costo-phrenic angle. It is, therefore, better to wash with normal saline after the Dakin's solution has been used.

3. Normal Saline ; or Acriflavine (1 : 1000) in normal Saline is non-irritating. It is harmless if it is left inside the pleural cavity in case the trocar is removed on account of a fit of cough.

4. *Other solutions used are* :—Gentian Violet 1 : 1000 aqueous solution ; Mercurochrome ; Methylene Blue ; Rivanol etc.

Whatever solution is used, the pleural cavity should be thoroughly washed till clear fluid is returned. All the pus and the toxic matter are thus washed out and the temperature comes down. With repeated washing, healing takes place.

If there are adhesions in the pleura, fluid may collect in several pockets. In such cases, the pleural lavage is not satisfactory.

Accidents during Operation.—1. The canula may come out of the pleural space and air or lotion may be injected into the tissues in the chest wall.

2. Trocar or canula may pierce the lung inside and spontaneous pneumothorax may result. This is likely to occur if the patient coughs when the trocar is in.

3. Excessive negative pressure in the pleural space may be produced by complete emptying of fluid or air. It is liable to cause pain or tightness in chest, cough, dyspnœa, tachycardia, palpitation, fainting etc.

4. A fit of cough may necessitate immediate withdrawing of canula and the lotion may remain inside.

Complications after the Operation.—1. Emphysema of skin may be produced if air escaped into the tissues.

2. Pleuro-cutaneous sinus may result if the fluid escaped through the hole in the chest wall.

3. Broncho-pleural fistula may result from the injury to the lung or bronchus through which pleural fluid may pass out.

4. Abscess in the chest wall may be produced from the infection of the fluid.

To avoid all these troubles, care should be taken to see that canula is well within the cavity before injecting air or lotion. "Stop-Needle" device is of much help.

Trocar should be pushed in before removing the canula and the puncture should be sealed with Tr. Benzoin Co. The patient should be told to lie on the other side so that no fluid may enter the needle track.

Conclusion.—Empyema is a chronic affection which, in a few instances may terminate naturally in recovery, but majority of cases if left alone, end in death. The operation of pleural lavage is simple, painless and can be done in all stages of disease. Fever and debility are not contra-indications. Often the temperature falls down after aspiration and patient begins to improve. It is an important measure in practical medicine; by this method dyspnœa, distress and gradual wearing out of strength can be immediately relieved, which otherwise seem to lead to death.

The methods of pleural lavage are presented in detail, the popularity of which may prevent much of the misery and distress in cases of empyema.

Acknowledgment.—My thanks are due to my chief, Dr. C. J. Joseph, (Superintendent of Pendra Road Sanatorium) to whom I owe a deep debt of gratitude for the guidance in carrying out the different methods of pleural lavage at the Sanatorium.

Evolution of Cataract Surgery from the Pre-Historic Age up to the Present Time*

BY

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THE science of medicine, like many other branches of learning, originated in Hindusthan. The Hindus considered the science of healing as an *Upa-Veda i. e.*, part of the Vedas, and it is universally known as *Ayurveda* or the science of life.

It is the *Atharva-Veda* to which *Ayurveda* owes its origin. "It is from the Vedas, through the mists of mythology and fogs of superstition that fifteen hundred years before Christ, we can discern the realities of existence in ancient Hindus". (GREEN ARMYTAGE).

On examining the contents of the *Atharva-Veda* more in detail, we find therein mention of various bodily ailments—namely, fever, jaundice, scrofula, cough, ophthalmia and other eye diseases, fractures and wounds, bites of snakes, and toxicology in general. And appropriate medicinal treatment for each of the affections is also mentioned therein.

Hence, the *Atharva-Veda* is the oldest literary monument of Indian Medicine. (MCDONNELL).

This *Atharva-Veda* cannot belong to a period later than 1000 B.C. but possibly earlier. (MCDONNELL's Sanskrit Literature.)

The first authentic and scientific record of cataract surgery is to be found in a medico-surgical treatise known as Susruta-Samhita written in pure classical Sanskrit by the world's first surgeon-ophthalmologist, SUSRUTA, the fourth son of the sage Viswamitra of ancient India, and the most prominent of the pupils of DHANWANTARI, "The Father of Indian Medicine".

SUSRUTA lived in this our sacred land of Hindusthan and practised and taught cataract surgery at the dawn of civilisation—thousands of years before Christ and long before the Hippocratean age (460 B.C.)

The age of SUSRUTA has been identified by various scholars, *i. e.* G. N. MUKHERJE, HOERNLE, THAKORE SAHEB of Gondal to be as early as 1000 B. C. The writer's opinion is that he flourished much earlier than 1000 B. C.

Our gratitude goes to that glorius batch of distinguished Western scholars—WILSON, ROYLE, HEINS, SCHULTZ, MCDONNELL, CAPTAIN JOHNSTON-SAINT, SOMADE KOROS, MAX MULLER, WISE and GREEN ARMYTAGE, for their thorough researches into the medical and surgical works of the Hindus, giving their unanimous verdicts that India is the birth place of medicine. We also thank the wellknown scholars

* Specially contributed to "The Antiseptic".

of the East, namely K. L. VISAGRATNA, MAHARAJA THAKORE SAHIB of Gondal, A. T. ROY, G. N. MUKHERJE, P. C. ROY and others for their thorough investigation into the Hindu medical science.

GREEN ARMYTAGE, in an inspiring address recently delivered, says: "Hitherto, it has been the pride and fashion of scholars to ascribe to the ancient Greeks the glory of having first conveyed, in their own language, the foundations of medicine, philosophy and art, but recent researches have shown that the genius of the Greeks drew its sap from Phoenicia and Cretes, from Babylon and Egypt, and even still further afield from Sumeria and the dwellers in the valley of the Indus. Indeed, it was from the East and not from Egypt that Greece derived her science, her philosophy and her mathematical knowledge, in a word, her intellectual stimulus".

Speaking of SUSRUTA, DR. GREEN ARMYTAGE says: "SUSRUTA taught that the foundation of surgery was anatomy and made his pupils do dissection. Thus began the golden age of Hindu surgery. To SUSRUTA we owe the discovery of cataract couching, skin-grafting and rhinoplasty. From him we possess a precise knowledge of midwifery and learn the positions occupied by the fœtus in uterus etc."

K. L. VISAGRATNA, in his introduction to Susruta-Samhita says, "To SUSRUTA is attributed the glory of discovering the art of cataract-couching which was unknown to the surgeons of ancient Greece and Egypt".

Such was SUSRUTA, a great surgical genius and the greatest ophthalmologist of ancient India, who taught and practised cataract surgery at the dawn of civilisation.

SUSRUTA was the world's first surgeon to deal with the anatomy, physiology, pathology, symptomatology and treatment of eye-diseases most exhaustively and elaborately. His ophthalmic works have been incorporated in the *Uttara-tantra* of Susruta-Samhita, Chap. I—XIX. He describes the diseases of the eyelid, sclera, diseases of the lens, and the visual apparatus,diseases of the uveal tract, iris and glaucoma. He is the first ophthalmic surgeon to have understood the anatomy, physiology and the functional importance of the lens, and to have studied the pathogenesis of cataract. To him goes the glory of having been the first ophthalmic surgeon to invent and perform the classical cataract operation. Indeed, SUSRUTA is the founder of cataract surgery.

Ophthalmic surgery made a great advancement in the pre-historic Susrutian age and we owe it to SUSRUTA for having described the anatomy of the lens. SUSRUTA knew fully well the functional importance of the lens. It was SUSRUTA who first described its true location and who knew that the lens only served to focus the light rays upon the retina.

SUSRUTA describes the macroscopic anatomy of the lens as a biconvex body simulating a Masur pulse in shape and size. (Masur—Lentil, lens esculenta.)

SUSRUTA knew the pathology of cataract and recognised that cataract was an opacification of the lens, and that it was due to the derangement of intra-ocular and bodily lymph. (Sleismika Linganasa).

The object of this short monograph is to trace the evolution of cataract surgery from the pre-historic age up to the present time.

We have mentioned already that cataract surgery had its birth during the pre-historic Susrutian age, and that SUSRUTA, the world's first surgeon-ophthalmologist, was the founder of cataract surgery, thousands of years before Christ and long before the Hippocratean age. On reviewing, therefore, the history of evolution of cataract surgery, we shall see that its course and progress can be described chronologically under the following periods, namely :—

1. The pre-historic Susrutian period *i.e.*, from 1000 B.C., when SUSRUTA invented and practised his classical cataract operation, upto the middle of the 18th century, during which period Susruta's method of cataract operation was being universally practised throughout Asia and Europe.

2. The post-Susrutian or the Davielian period, *i.e.* from 1745 A.D. when DAVIEL gave a new shape and re-orientation to cataract surgery by devising the extracapsular method of cataract extraction, up to 1875—80 A.D. when the world first saw the discovery of antiseptics and anæsthetics. During this period, Daviel's method of extracapsular cataract extraction was being extensively practised.

3. And the period of modern cataract surgery, *i.e*, from nearly 1880 A.D. up to the present time, when both extra-capsular and intracapsular methods of cataract extractions are being universally and extensively practised throughout the world.

In describing the course and progress of cataract surgery in the pre-historic Susrutian age, we shall first describe the classical cataract operation of lens couching performed by SUSRUTA, the founder of cataract surgery, as recorded by him in Chapter XVII, verses 55—100 of *Uttara-tantra* of Susruta-Samhita. In this chapter, SUSRUTA deals with the causation, varieties of cataract and describes the technique of lens couching method of cataract operation by the anterior route. He advocates the operative treatment of mature cataractous lens. (Sleismika Linganasa). He forbids the operation of unripe cataracts. He gives the pre-operative treatment, describes in detail the operative technique, mentioning the usual post-operative treatment and ends by noting the contra-indications for couching, with the necessary treatment thereof.

Cataract, according to SUSRUTA, is caused by the derangement of intraocular and bodily lymph, and cataract is opacification of the lenticular substance.

Varieties of Cataract.—SUSRUTA recognises the following varieties namely :—(1) Cataract with a semilunar nucleus. (2) Cataract of the colour of a sweat drop. (3) Pearl-shaped Cataract. (4) Hard Cataract.

(5) Irregular Cataract. (6) Cataract with a thin nucleus. (7) Striate Cataract. (8) Multi-coloured Cataract. (9) Blood-red-coloured Cataract.

Time of the Operation :—The operation of couching is to be done in a season which is neither very hot nor very cold.

Pre-operative treatment :—On the day before operation,the patient should be purged by emulsive measures and purgatives thus freeing the body from the deranged bodily humours; he should also be free from any constitutional diseases, as also bronchitis, pharyngitis, rhinitis, conjunctivitis etc., before being brought to the operation table. He should be given non-stimulating diet. On the day of operation, he should possess a cool temper and an unperturbed and cheerful mind.

The technique of the operation :—The patient should be seated in a specially designed and constructed operation table and should look equally and uniformly towards his nose, and should keep the eye steady without moving it in any direction.

The surgeon should open the eye sufficiently and keep the lids stretched by an assistant.

The point of puncture on the globe should be just outside the junction of black and white regions (limbus) on the temporal side and should be in a line dividing the white portion equally into two segments—upper and lower—and should not be over the plexus of blood-vessels. It should be in the line of the natural aperture (Daibakrita Chhidra.)

The surgeon should hold the Jaba-mukhi Salaka (the curved barley mouthed needle, Fig. I) in the middle carefully, steadily and confidently by the thumb, fore-finger and middle finger and should

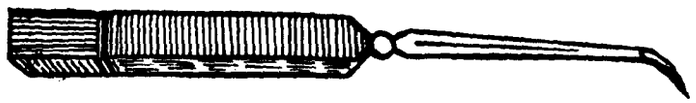

Fig. I. Susruta's Jabamukhi Salaka. (Barley-mouthed needle).

puncture through the natural aperture, neither above nor below nor laterally, the left eye with the right hand, and the right eye with the left hand. A right puncture will be indicated by exudation of a drop of water and a sound; whereas an incorrect puncture will be followed by bleeding.

Immediately after the puncture is made, the eye should be sprinkled over with breast milk. Thus keeping the eye fixed, light fomentation externally to the eye should be applied. The cataract, after being reached through the natural aperture, should be scribbled and scarified with the tip of the Salaka till it is dislodged out of the visual field. The patient's nose will in the meantime be closed and he will be asked to sneeze and suck in phlegm from his nasal sinuses into his throat. The proper dislodgement of the cataractous lens

will be heralded by the clearing of vision, as the sun becomes brilliant after the clearance of clouds, and the eye will be painless.

Then the barley mouthed Salaka is to be carefully and gently withdrawn. Lukewarm clarified butter, is to be poured into the eye, a lint soaked in the same is put over it and the eye will be bandaged properly.

After-treatment :—The patient is to keep flat in a room free from dust, smoke, protected from sun's rays and well-ventilated, and should remain calm and quiet. The patient should not eructate, nor yawn, nor cough nor sneeze nor spit.

The eye should be opened on the third day and washed with the decoction of drugs of soothing, antiphlogistic and antiseptic properties *i.e.*, root of Ricinus Communis and Embelica Officinalis, and bandaged up with a fresh bandage. After the fourth day, compress is to be given.

The patient should not take solid food, but should take only liquid light food, and enough of fresh milk daily for ten days, after which his food should consist of light solid articles in moderate quantities and milk.

If all goes on well, the bandages are to be removed on the 10th day and the patient should be restrained from looking at dazzling light and the glaring sun, till the accommodation of the eye is restored to its normal condition.

SUSRUTA goes on to give the contra-indications for operation in verse 37, and also describes the symptoms, signs and treatment of the disorders and complications resulting from injudicious or faulty operation.

SUSRUTA forbids doing the lens couching operation in the following cases, namely :—

BOYS, and old men who suffer from a hæmorrhagic diathesis and therefore, unfit for venesection; people suffering from some inflammatory condition of the eye; people suffering from acute bronchitis and pharyngitis, and pregnant women.

SUSRUTA wisely warns that the puncture should not be made anywhere except through the natural aperture.

SUSRUTA goes on to mention the complications which occur as a result of incorrect puncture :—Due to injury to the ciliary vessels, there is conjunctival hæmorrhage into the ocular sac. If, by chance, excessive hæmorrhage occurs due to incorrect and injudicious puncture, mother's milk and clarified butter with glycerrhiza boiled together should be sprinkled over into the conjunctival sac. This is the usual treatment administered in case of hæmorrhage.

Now for special treatment for complications arising out of puncture at different parts of the eye :—If the sclera is punctured in the vicinity of the external corner of the eye in the temporal side, there is

chemosis, ciliary injection, pain and excessive epiphora and discharge of inflammatory exudation. To counteract this, sprinkling of warm clarified butter and compress over the brow is recommended.

If the puncture is made in the vicinity of the cornea, the cornea becomes inflamed and painful. Purgatives, sprinkling of clarified butter and venesection with leeches are indicated. If, on the other hand, puncture is made in the upper portion of the cornea, intolerable pain is experienced. Lukewarm clarified butter sprinkled over the conjunctiva allays the pain. If, however, the puncture is made below the cornea, too much pinching, throbbing or shooting pain, lachrymal discharge, and ciliary injection of the eye occur. In this condition, mother's milk along with glycerrhiza cum clarified butter is to be boiled and the lukewarm decoction poured over into the eye.

If the eye has been too much lacerated, intense ciliary and conjunctival injection, lachrymal discharges, intense pain, horripilation and temporary diminution in visual acuity occur. In such cases, oleajinous medicament, compress and enemata are indicated.

SUSRUTA next discusses the complications arising from using a defective Salaka—acute and throbbing pain is produced by using a roughly shaped Salaka; an unsmooth Salaka will lead to the aggravation of the deranged humour; ulcer results by using a thick topped Salaka; whereas, a very sharp Salaka lacerates many vital structures of the eye in many ways; excessive lachrymation results from using a Salaka with an irregular mouth, and unsteadiness in grasping the Salaka interrupts the operation. Hence, SUSRUTA strictly enjoins upon the surgeon to see that the Salaka is free from the above defects, so as to safeguard and preclude the apprehension of the complications mentioned above.

Complication accruing from injudicious puncture and intemperate diet and conduct of the patient during the post-operative period—redness or intense ciliary and conjunctival injection of the eye, chemosis, sucking pain and intraocular inflammation are the results. Treatment for each of the affections is detailed below:—

For the amelioration of acute pain and inflammation, accompanied by ciliary injection, a plaster composed of Gairika (Red Ochre), Anantamula (Echites Frutescens, Indian Sarsaparilla), Durba (Eragrostis Cynosuroides), barley powder and clarified butter and milk—these being warmed. A plaster made of white mustard seeds and slightly fried seasmum seeds pasted with squeezed-out juice of Matulanga (Citrus Lemmata) allays pain and inflammatory injection; or a plaster composed of Payasya (Cleome Pentaphylla), Anantamula (Indian Sarsparilla), Tejapatra (Léaf of Lourus Cassia), Manjistha (Rubia Cordifolia) and glycerrhiza, - all these pasted together with milk of a she-goat should be applied lukewarm to the affected organ. A lukewarm plaster composed of Padmakastha (Prunus Pudum), Devadaru (Pinus Deo-dara), Sunthi (Dry Ginger) pasted with the milk of a she-goat is beneficial in such cases or a plaster made of grape,glycerrhiza and Sausurea Lappa pasted with milk of a she-goat should be applied; or a warm decoction of milk with glycerrhiza, grape, Sasurea Leppa and a little Saindhava (Sodii Chloridum) should be applied. This decoction of milk compound allays inflammation and pain. The decoction of Satamuli (Asparagus Recemosus) Pruthakparni (Uraria picta), Mustaka (Cyprus Rotundus), Amalaki (Embelica officinals), Padmakasta (Prunus pudum) and clarified butter cooked with the milk of a she-goat should be applied for the alleviation of inflammation and pain.

Rightly does SUSRUTA observe when he says that of the varieties of cataract that are most suitable for couching operation are the uncomplicated mature ones—preferably the pearl-shaped varieties and the hard varieties of cataract.

As for the immature cataracts, they are not suitable for couching operation, and in case it is done, the dislocation will only be partial. After a time, cataract will appear again attended with intraocular complications.

As for cataracts attended with complications, SUSRUTA wisely warns not to interfere surgically until the amelioration of the associated complications.

We have so far given briefly the teachings of SUSRUTA's cataract surgery. We shall now see how his teachings on cataract surgery gradually spread throughout Asia and Europe, and how the ophthalmic surgeons of these countries adopted universally SUSRUTA's methods in ophthalmic practice, effecting slight modifications and alterations in technique in individual cases.

ROYLE says: "From PLINY we learn that India was visited by PYTHAGORAS (500 B.C.), EMPEDOCLES, DEMOCRITUS, PLAIO, THALES, CRATES, EUDOXUS and others". (ROYLE's Antiquity of Hindu Medicine).

BRUCKER says: "India was visited by PYTHAGORAS, ANAXARCHUS PYRRHO, and others who became afterwards eminent philosophers in Greece". (BRUCKER's Philosophy by ENFIELD).

G. N. MUKHERJEE says: "We know that two Greek physicians KTESIAS (about 400 B.C.) and MEGASTHENES (300 B.C.) visited Northern India".

In this way, we can adduce ample evidence in support of the fact that in the pre-historic Susrutian and post-Susrutian days there was free inter-communication between India, Asia and Europe. Savants from Arabia and Greece visited India to learn the scientific truths from the surgeon sages of Hindusthan.

PHILOXENES, who flourished about the 3rd century B.C. was a great Eye Surgeon practising in Alexandria. From his writings we come to know that he extensively practised lens couching operation. PHILOXENES is quoted by CELSUS as a great authority on cataract surgery.

HEROPHILOS who also flourished about 300 B.C. was a great surgeon of Alexandria. He practised cataract surgery extensively.

CELSUS of Rome, a contemporary of Christ, who flourished about 45-50 A.D., was also a great Eye Surgeon. His method of couching operation is described below:—

He lays down as a rule that when the suffusion is small, immovable and of the colour of sea water or of shining iron, and if a small degree of light can be perceived at the side, there is reason to hope well of the case. He forbids us to operate until the disease has attained a proper consistence. He directs us to place the patient opposite the operator who is to sit on a higher seat, while the patient's head is held by an assistant. The sound eye is to be previously covered with wool. If the left eye is affected, the operator must use his right hand and vice versa. A needle which is sharp and not too slender is to be passed direct through the two coats at a place immediately between the temporal angle and the black of the eye, and towards the middle of the cataract. When the needle is perforated far enough, which is readily known by the absence of resistance, it is to be turned so as gradually to remove the cataract below the region of the pupil and this object being attained, it is to be strongly pressed to the lower part. If it remains there, the operation is completed, but if it returns, it is to be cut and torn by the needle into many pieces in which state they are easier depressed and less troublesome. The needle is then to be drawn out direct and soft wool smeared with white of an egg, and other anti-inflammatory applications are to be used. Quiet, restricted and soothing treatment will be proper. (CELSUS vi. See ADAM's Commentary to PAUL vi, xxi).

CLADIUS GALENUS who lived in Asia Minor in about 131 A.D. to 201 A.D., was a great advocate of lens couching method. He had his own technique of lens couching operation. From GALEN's notes we know that there were many surgeons in Alexandria and Rome who extensively practised lens couching operation.

Now we shall record the lens couching operation as practised by VAGBHAT II, a devout follower and pupil of the Susrutian School and a great ophthalmic surgeon of India in the post-Susrutian period. He is the son of SINHA GUPTA, an inhabitant of Sind in Western India. His works are embodied in a medico-surgical treatise known as Astanga-Hrdaya-Samhita. VAGBHAT acknowledges the assistance he derived from the writings of CHARAKA, SUSRUTA, AGNIVESA, BHELA and others who had gone before him. Regarding his age, DR. KUNTE and SIR BHAGBAT SINGHJE, the Thakore Saheb of Gondal, place him as early as the second century before Christ, while DR. G. N. MUKHERJE says that VAGBHAT, the author of Astanga-Hrdaya-Samhita flourished as early as the 7th century A.D. It seems likely that he must have flourished earlier than this period.

VAGBHAT'S cataract surgery is recorded in Chapter xiv of Uttarasthan of his treatise known as Astanga-Hrdaya-Samhita. He lived in an age when cataract surgery had attained a high state of evolution. He had the benefit of the teachings of SUSRUTA, the founder of cataract surgery. As for the pathogenesis of cataract, VAGBHAT agrees with SUSRUTA when he says that cataract is an opacification of the lens due to the derangement of intraocular and bodily lymph.

(To be continued).

CASES AND COMMENTS

Cervical Infection and the Bladder in Females

BY

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Bombay.

HITHERTO. the importance of the bladder with regard to the cervix was mostly considered from the point of view of extension of malignant diseases of the cervix and of the effects on the bladder of the various displacements and prolapse of the uterus.

Recently, a number of symptoms of the bladder have been recognised which are intimately associated with infection of the endo-cervix which,though not of major significance,yet are certainly very irksome to the patient and without a proper perspective of their cervical etiology are difficult to explain and still more difficult to treat.

The cervix is attached in front to the base of the bladder by a minimum amount of connective tissue in which there is no free lymphatic communication. But the lymphatic fields of the two organs are in close juxta-position in this separating layer and a chronic infection of one field may easily contaminate its neighbour. A more plausible path of infection is a retrograde one, situated at the base of the broad ligaments and in the substance of the utero-sacral folds in which the main lymphatic vessels of the cervix and bladder lie and come into free relation with each other.

The cervix uteri has been aptly named as the pelvic tonsil. Just as chronic tonsillitis can extend to the eustachian tube through the pharyngeal wall and cause middle ear catarrh, so too the cervix is a common source of parametritis postica, the most annoyiug symptoms of which are backache and pain low down in the pelvis. Similarly, cervical infections not infrequently are responsible for bladder symptoms.

There is a characteristic symptom complex :—(1) frequency of micturition, (2) backache (3) leucorrhoea. Frequency of micturition is the most constant symptom and, in a good number of cases, there is slight urgency, bordering on a mild form of strangury. Trigonitis is present in about 30% and a few show a variable amount of granular urethritis. Backache is low down, usually periodic and has its onset dating after the cervical infection.

The diagnosis of cervicitis as an etiological factor in urinary disturbances is based on the finding of evidences of cervical infection and the absence of the findings that indicate presence of renal tuberculosis, interstitial nephritis, diabetes, and lesions of the central nervous system. Cystoscopic examination is negative and local treatment to the bladder alone gives no results.

Treatment.—Treatment of the cervix is essential to give relief to the bladder. Cauterisation and conization are the favourite methods. In certain cases instillation of 5 c.c.of ½% solution of Silver Nitrate into the trigonum will be required in addition. Certain cases which are intractable require injections of Alcohol (2 c.c. of 90%) into Franken-Haussar's cervical ganglion to relieve the bladder symptoms as well as backache associated with parametritis postica.

A Note on the Village Method of Guineaworm Extraction

BY

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GUINEAWORM disease is common in villages round about Poona. Its cure is still a problem to the medical science. It is surprising to see how little effort is done to investigate the disease compared to the enormous suffering and economic loss it causes.

While doing medical relief work in villages, I am always inquisitive to know how the local people try to get over their troubles. While trying to know this about guineaworm, I came across a method commonly employed in villages for the extraction of the guineaworm. Before describing the method, I will refer, in short, to the field-diagnosis of guineaworm infection by the village surgeon.

It is not difficult to disagnose guineaworm infection in a person coming from a known infected area. As a matter of fact the patient himself will suggest the probability when he comes with the complaint of 'itching of the body' or 'a swelling, a vesicle or an ulcer on the foot'. Sometimes, the patient may come with the 'fine thread' of the guineaworm projecting from an ulcer when the diagnosis is quiet clear. Sometimes, he may say that he has got a guineaworm in the proximity of a joint—usually the ankle—where one may not be able to see anything. But on feeling with the tips of the fingers, an irregular knotty structure can be made out under the skin only if one has learnt the feel of a subcutaneous guineaworm. It was surprising to see the village-surgeon diagnose and extract guineaworms from areas where none could ordinarily be suspected.

On coming to a conclusion that a guineaworm is present in a particular part of the body, the village-surgeon or vaidu proceeds to make short superficial incisions at different angles in the area by means of a sharp razor, about one incision to a sq. inch. Then he applies his 'Tumbadi' to the part. 'Tumbadi' is a conical metal tube about six inches long with the broader end having a diameter of 1 - 1½ inch and with a small hole at the other end. It is open at both ends. The

vaidu puts the broader end on the area of incisions and sucks forcibly at the narrow end. After exerting maximum negative pressure by mouth, he puts his right index finger on the hole skilfully and maintains the negative pressure for 5-15 minutes, pressing the instrument all the time against the part of the patient to prevent any leakage from the sides. Gradually, the negative pressure in the tube diminishes as a result of sucking in of the subcutaneous structures with some blood. When the negative pressure is very low the 'Tumbadi' can be easily removed, when a coiled up guineaworm in some clotted blood will be found in it. If no guineaworm is found, the operation can be repeated once or twice without much inconvenience to the patient.

I have used this method with some modification, in practice, the essential technique remaining the same. I clean the area of incisions with spirit and ether and if the patient is sensitive,I use 1% Novocaine to infiltrate the part. The infiltration is rarely necessary as the superficial cuts are often almost painless when done with a sharp instrument. I have found it useful to 'steam' the area for about five minutes before making incisions. The steaming is done by means of a rubber tube connected with a boiling kettle. After steaming, the prospect of getting the worm in the 'Tumbadi' is definitely improved. The part is covered with sterile dressings at the end of the operation.

By this method, I have been able to remove 2-3 worms at a sitting. It is not uncommon for a patient to return complaining of 'guineaworm sensation' in some other part and again one may be able to remove more worms from that part. I have seen thirty and more guineaworms removed from a patient in this way, off and on, during a year. It will be interesting to note that swelling and ulcer formation appear in the early part of the infection, while in the later latent stage there is rarely anything more than vague pain in a part. Such part is usually a joint-more commonly the ankle which appears to be the site of predilection. Itching and erythematous rash may be occasionally present and the 'guineaworm sensation' may be felt by one with an educated feel.

Before despatching these notes,I have learnt that almost a similar method is described by FAIRLY and GLEN LISTON about 15 years back. It has also been referred to in the revised Health Bulletin No. 7. But unfortunately, the method appears to have been neglected in practice. This paper is intended to revive the interest of the profession in this old, village Indian method of guineaworm extraction with special reference to the modification of 'steaming' suggested by me.

"Alkali" Pyelitis

BY

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HINDU male, aged 45—complaint of "urine trouble". Fresh urine showed reaction strongly alkaline, sp. gr. 1022, turbid, plenty of viscid mucus—albumen: trace; sugar: nil; phosphates: present. Microscopically, pus cells in fair quantity, sheets of bladder cells and large clumps of staphylococci. It looked a typical case of pyelitis. The history, however, was interesting. He had been suffering from chronic peptic ulcer for which he had been taking an "Alkaline powder" very regularly for the past one year. The urine trouble was about 4 months old and he had noticed a slight relief when he was not taking the Alkaline powder for a few days. But as the ulcer pain recurred without the Alkaline powders, he had to continue.

He was advised to leave off the Alkaline powders for a week and report. After a week, the urine was clearer but not quite free from pus cells and cocci. The ulcer pain, however, was recovering. He was then put on a milk diet and given Olive oil and Tr. Belladonna 5 m. doses. The pain completely disappeared, the urine was gradually clearing up. At this stage, pure cow's ghee was substituted for Olive oil, the Belladonna doses were stopped and he was put on a powder of prepared Chalk gr. 20 and Kaolin gr. 40 in place of the Alkaline powder. The urine was microscopically normal with a weak acid reaction in 3 weeks' time. Subsequently, he was free from the ulcer pain with a fairly normal diet by taking plenty of good ghee and the Kaolin and Chalk powders. He has had no recurrence. The original Alkaline powder contained 10 gr. of Soda Bicarb, Mag. Carb and Chalk.

Subsequently, I came across three more cases when a strongly Alkaline pyelitis resulted from the Alkaline treatment. In none of these cases was there any history of previous pyelitis or any other causative factor and in three of them, no urinary antiseptic was necessary for clearing up the condition. In fact, the usual acid Sodium Phosphas. and Hexamine mixture was tried in the other case with distinctly bad results on the ulcer pain.

The Points of Interest are:—1. The production of pyelitis due to the constant alkalinity, brought about by the administration of alkalis over long periods, the chief culprit being Soda. Bicarb.

2. The clearing up of the condition without any urinary antiseptics.

3. The difficulty for a patient to balance the acid-alkaline balance when he suffers from an ulcer and "Alkali" pyelitis, if he is taking any Soda. Bicarb.

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EDITORIAL

The After-Treatment of Fractures

In the treatment of fractures, there are three main objectives: (1) to secure bony union; (2) to restore full movement in those joints which have been temporarily immobilized; and (3) to restore the maximum power in the muscles which move those joints. We are here concerned with the latter two aims. In all fractures, from the very firs stage, all these three objectives must be borne in mind. It will therefore be correct to discuss the preservation and restoration of function, under two main headings—(*a*) during the period of fixation (*b*) after the splints have been removed.

Proper fixation of a fracture of a long bone demands the immobilization of the joint above and the joint below the site of fracture. In a large number of cases, this is best provided by plaster-of-Paris applied directly on the skin without padding. This affords facility for the remaining joints of the extremity to be used freely without risk of disturbing the broken fragments and the insistence of the free use o the joints not splinted is of the greatest importance. This not only entails a full range of movement in these joints from the very beginning, but it also means that the muscles covered by plaster-of-Paris are being constantly contracted even though they are unable to move the splinted joints. Venous stagnation and muscle atrophy are reduced to a minimum and thus wasting and oedema so often seen are things of the past. Tendons no longer become bound down by adhesions in their grooves, for the movement possible in the joints immediately after the fixation apparatus is removed, is really very large. By this present-day method, the active power and mobility of an injured extremity at the time when the fracture has united far exceed what could be obtained by the older method of "extremity immobilization".

There are, however, certain fractures in which early movement

and physical treatment are justified. Impacted fractures in the region of the surgical neck of the humerus in which effective fixation is supplied by the surrounding muscular attachments and "bumper" fractures of the external tuberosity of the tibia, common among old people, are examples of the above-mentioned fact.

We shall now consider the treatment after discarding of splints. The fracture has now united and may be sufficiently consolidated to withstand the cross and shearing strains of muscular action alone, but not the strain of weight-bearing. Consequently, fractures of the femur or tibia may require the support of a calliper or walking steel for some months after the mere complete fixation has been discarded. Indeed, it is generally conceded that some mild support for all fractures after discarding the retentive apparatus is greatly appreciated by all but very young patients.

Restoration of joint movement and of muscle power proceeds concomitantly. Children and young adults can usually mobilize their joints without any special help other than appropriate instruction. Older people are often apprehensive and tend to "nurse" an injured joint after removal of the splint. Physiotherapy is most helpful for the latter group of patients as a supplement to their own efforts; thorough "baking" of the affected joint by the application of heat in any of the well-known recognised forms (radiant heat, infra-red or a rubber hot-water bottle,) and massage and faradic stimulation of the muscles which move those joints. Encouragement in voluntary movements have proved valuable in many cases. The last is important. It must be emphasized that the constant active efforts of the patient himself are by far and away the most important factor in restoring muscle power and joint movement. An impression is prevalent among the lay public that complete restoration of function follows automatically on the application of the various forms of physiotherapy. Consequently, the patient does not feel it imperative to perform active movements at regular intervals. As this is a mistaken impression, a definite routine of muscular contractions and relaxations which entails movement of the joint or joints in all directions should always be instituted for a period of five or ten minutes every hour during the day. At first, the patient may require the sympathetic but firm encouragement of a doctor and personal individual attention may help a great deal in the early stages of his rehabilitation. Once the joints begin to mobilize and confidence has been restored, exercises on a general scale can be started. As muscle power and bulk increase and the joints approach the limits of movement, more vigorous exercises will help to complete the cure.

Passive movements are very important. Following prolonged immobilization of a joint, there is always a certain amount of stiffness when the splint is removed, especially if there has been a fracture in the neighbourhood of the joint. This limitation of movement is due to "adhesions". These adhesions are simply bands or masses of scar tissue formed by the organisation of blood clot and the sero-fibrinous exudate which follow on an injury. In this way, folds of the joint

capsule become adherent and painful limitation of movement results. In the vast majority of fractures, such adhesions are most effectively stretched gradually by the patient's own active efforts on removal of the splint. It cannot be emphasized too often that passive movements carried out frequently and enthusiastically are sometimes prejudicial to the restoration of joint movement. They cause, by repeated tearing, as opposed to stretching, adhesions, further exudate and more adhesions and may result in the formation of new bone in the capsule or surrounding muscles. Such forcible measures have no place in the early stages of joint mobilization after injury, as they always result in increasing stiffness.

Occasionally, after a prolonged trial of active mobilization, a manipulation under anæsthesia may be advisable to overcome residual stiffness in a joint situated close to a fracture, or for the cure of pain persisting after an apparently full range of movement has been achieved. The success of such manipulation will depend on the nature of the adhesions present, on the timing and technique of the manipulation and on the character of the after-treatment. The appropriate time at which a manipulation should be carried out is difficult to decide. It can, however, be emphatically stated that no manipulation should be attempted: (*a*) In the early stages after a fracture has united when the neighbouring joints are still irritable and manifest their irritability by muscle spasm if movements, active or passive, are attempted beyond the limit of pain. Manipulation at this stage may cause re-fracture and will increase capsular scarring and damage joint cartilage, and may produce nerve injury and myositis ossificans. It is still unfortunately too common to see patients whose elbows, within two or three weeks following a supracondylar fracture or dislocation, have been "pump-handled" at two or three day intervals under an anæsthetic and are permanently stiff. (*b*) If movement is increasing, however slowly, as the result of the patient's own active effort. Sometimes impatience on the part of the patient and the doctor will lead to an unnecessary and prejudicial manipulation. (*c*) In children, it has already been stressed that young people are capable of restoring full movement by their own efforts alone. The worst tragedies of injudicious manipulations are exhibited in fractures around the elbow-joint in children. (*d*) In the presence of vascular or nervous complications or arthritis.

The technique of manipulation is not very difficult. It consists essentially in putting a joint through its fullest range of movement in all directions. Experience enables the surgeon to avoid using too little or too much force, to avoid breaking bones and dislocating joints, to avoid doing too much or too little at one sitting. It is often better and will cause less reaction to stretch adhesions by a series of careful incomplete manipulations at intervals of six weeks rather than to perform one very thorough manipulation.

The majority of patients treated efficiently require no special rehabilitation. There is, however, a small group particularly those suffering from industrial injuries, for whom the gap between the

stresses of such remedial activity as a hospital massage department can provide and the stresses of full heavy work should be bridged by a final period of re-educational treatment. The subject should be taken through graduated work to the full stress of his original occupation while constantly under medical supervision. This constitutes the one great argument in favour of the creation of rehabilitation centres.

So far as possible, exercise given to the patient should be of an occupational character and should correspond closely to those which he is constantly carrying out in the process of his work. In this country, it is regrettable that such facilities are few. Those of our readers who want to get a more detailed view on the subject are requested to read the very excellent article by DR. H. OSMOND CLARKE, F.R.C.S., on "The After-treatment of Fractures" appearing in our distinguished contemporary, "The British Medical Journal" (January 6th, 1940), from which the subject-matter of the above article has been taken.

Bill to Regulate the Import, Manufacture, Distribution And Sale of Drugs

ALEMBIC CHEMICAL WORKS, LTD., Baroda, have addressed a lengthy communication to the Secretary to the Government of India, Department of Education, Health and Lands, New Delhi, a copy of which has also been sent to us, setting forth their considered views on the above Bill and suggesting various amendments to the clauses in the Bill, so as to make the Bill acceptable to the Public and the Profession, both of Medicine and Pharmacy. Being one of the biggest manufacturers of chemicals in India and possessing the longest experience in this line of business, they are entitled to speak with authority on the subject, deserving of the careful consideration of the Government. The salient features of their criticism of the Bill have been set forth in the following nine points:—

"(1) that the manufacture, distribution and sale of drugs in Indian States should be similarly regulated so that drug control in both Indian States and British India will be on a uniform basis and under one Legislative Act;

(2) that the regulations made in respect of indigenous and imported drugs should be the same and that there should be only one 'Schedule of Standards' for application to both imported durgs and drugs manufactured in India;

(3) that there should be uniformity in the drug control measures enforced in the British Indian Provinces and in Indian States and that all these regulations should take effect simultaneously from a particular early date;

(4) that the interests of the manufacturers situated in British India and in Indian States should be adequately represented in the Central Government's Technical Advisory Board and that this Board should have a clear non-official majority;

(5) that the rules for enforcing the provisions of the Drugs Act throughout India should be made by the Central Government or the Technical Advisory Board so as to allow no scope for divergent regulations in the different Provinces and States, and particularly that the appointment of the Government Analysts and Inspectors, the alteration or amendments of the Schedule of of Standards, etc. should not be left to the Provincial Governments, but should be made by the Central Government, with the approval of the Technical Advisory Board;

(6) that the powers of the Inspectors should be clearly defined and limited;

(7) that there should be a recognition of foreign pharmacopoeias other than the British pharmacopoeia and that standard works of Materia Medica and on drugs should also be recognised;

(8) that the compilation of an Indian Pharmacopoeia should be taken up immediately, which the Drugs Enquiry Committee had, as early as 1931, recommended to be done "without delay", and

(9) that "there is a need for enacting a Central Pharmacy Act, at the earliest opportunity".

We have also received a Memorandum from Dr. KHWAJA, A. HAMIED, B.SC., M.A., PH.D. (Berlin), A.I.C., F.C.S. (Lond), Member, Legislative Council, Bombay, pointing out certain defects in the Bill, to wit:

(1) the non-inclusion of the Pharmacist Profession in the proposed Technical Advisory Board;

(2) the exclusion of Unani and Ayurvedic medicines, which are also drugs, from the purview of this Bill;

(3) the omission of the standards of other Pharmacopoeias, such as Swiss, American and German, whose medicinal products are also in extensive use in this country;

(4) the inclusion of Non-Pharmacopœial drugs also, for which no standardization is possible;

(5) the provision of drastic powers to Inspectors by which they are entitled to enter the premises of the manufacturers, demand samples of any medicines which are being manufactured, know the processes of manufacture, the plant used for such manufacture, methods of testing and standardization etc., which would place the manufacturers at the mercy of the Inpectors.

(6) non-fixation of qualifications for those engaged in the manufacture and vending of drugs and medicines;

(7) the non-inclusion of the Indian States where large-scale manufactures of medicines are carried on.

We have already in our Editorial of March 1940, dwelt upon most of these points and we trust the Government of India will pay due heed to the communication of Alembic Chemical Works, Ltd., mentioned above and the memorandum of DR. HAMIED, and so modify the Bill as to make it a truly beneficial enactment.

GLEANINGS FROM MEDICAL PRESS

Medicine and Therapeutics

A Method of Timing Heart Murmurs.—This is suggested by BERNARD FARFEL in *Journal A.M.A.* for October 28, 1939.

It seems that many physicians have little difficulty in learning to recognize normal heart sounds or in detecting the presence of a cardiac murmur but often their determination of the time of a murmur in the heart cycle is faulty. CABOT states that the commonest of all errors in diagnosis of diseases of the heart is the misinterpretation of systole for diastole.

In routine examinations, many physicians rely on the ear alone, calling on palpation or observation of the apex, carotid or radial impulse when in doubt. That present clinical procedure is not entirely satisfactory is borne out by the frequent errors every physician sees or makes himself. MACKENZIE writes from his experience with recognized internists that many doctors never acquire the ability to time murmurs. WARFIELD, writing in Tice, points out the possibility of mistaking a seesaw murmur in mitral stenosis with regurgitation for a prolonged systolic murmur. It would be presumptuous to dwell on the importance of proper timing of murmurs for physical diagnosis.

The method I am about to describe requires none of the intricate types of apparatus that have been devised. It requires nothing that the physician does not ordinarily have at the bedside. My own experience with palpation coincident with auscultation has been one of difficulty in correlating the two sensations so as accurately to time the murmurs I hear. I felt that I would better be able to time the murmurs heard were I able to employ vision in conjunction with hearing, and I particularly sought some method which could be used in all cases. I have utilized the method to be described in numerous instances and have found it useful. I taught the method to several of my associates, with gratifying results.

Briefly, the following technique is employed: After I have taken the patient's blood pressure, I leave the cuff in place and set the mercury column at about midway between the systolic and diastolic blood pressure readings. This is done so as to obtain good excursions of the column with each beat. If one listens to the normal heart, it will be found that the upward excursion of the mercury column is coincident with the second heart sound. In this way one has already established a point at which systole ends. CABOT teaches that the mistaking of systole for diastole would not occur if the physician were sure just when systole takes place. Knowing that the second heart sound and the impulse given to the mercury are coincidental, one should note whether the murmur in question immediately precedes this phenomenon, as would be true of a systolic murmur, or follows it which would be the case with a diastolic murmur.

That the second sound is dependent on aortic tension is pointed out by HOWELL, who quotes WILLIAMS' work on animals in which he shows that the second sound disappeared as an animal bled to death, and the heart failed to throw out a sufficient supply of blood to maintain aortic tension. That the sudden thrust upward of the mercury should occur at the moment when the second sound takes place may be at least partially explained physiologically. BEST and TAYLOR describe the rebound of the distended aortic wall at the close of systole, causing the aortic valves to close and forcing the blood along to the periphery as well.

It will also be observed, in using the method described, that the period during which the mercury falls slightly, just prior to the sudden rise, will usually coincide fairly well with the interval between the first and second sounds, namely systole. The technique given offers another means of timing murmurs.—*The General Practitioner.*

Pneumonia—Colonic Lavages.—H. W. HALES (Cantab.) emphasizes the value of the following therapy introduced by NOTT in 1925 which has excellent results also in severe diabetes ("an intestinal toxæmia which damages the pancreas and liver"); eczema, pityriasis rosea, psoriasis, acne, pyodermias; thyrotoxic heart, cardiac insufficiency, meningitis, measles, scarlet fever, rheumatic fever; etc. A solution of Potassium Permanganate varying from two grains to one pint of water to one grain in three pints at the highest suitable temperature (100° to 115°) is run slowly 2 to 3 inches into the rectum until, if possible, the cæcum is reached. This will take from 3 to 4 pints, but in many constipated cases much less is sufficient, and the result is evacuated into a bed pan. Then the colon is irrigated with a solution of 1 grain to 5 pints. The fluid is manipulated towards the cæcum by massage and position and whenever gas or spasm is encountered it is allowed to syphon back. This procedure is continued if well tolerated until the result is clear. At the end of the lavage 2 to 5 ounces of a solution 1 grain to 1½ pint are run very slowly into the colon and allowed to remain. If the patient is not too weak it is best to give the first 1½ pints in the left lateral position and the remainder in the dorsal position. In very toxic cases the stronger solutions are used at 4 to 2 hours' intervals. As a rule in 12 to 18 hours the general condition improves, the pulse rate and temperature fall, the rusty sputum becomes mucopurulent. This treatment is suitable for all forms of pneumonia, even in infancy.

The diet should consist entirely of fruit juices until the temperature falls. The urine should be kept alkaline by sufficient doses of bicarbonate of soda. Open air treatment is essential. (Med. World, Vol. 51, No. 8, 1939.)—*Ars Medici.*

Sweat as a Fungicide.—Some interesting work has been done in America by SAMUEL M. PECK and his assistants on the role of sweat as a protection against fungus infections of the skin. The hypothesis

that sweat may have any definite protective action of this kind runs contrary to the accepted notions of most people, for we have always been accustomed to think that hyperidrosis conduced to fungoid infection of the skin, and the prevalence of such infections in hot climates has always been considered to support that theory. DR. PECK, however, ascribes that undoubted clinical fact not to the actual hyperidrosis but to the dilution of the sweat that takes place under such conditions. He shows that sweat, the secretion of which has been induced by heat, has undoubted fungicidal properties which are due to its content of various organic acids—for example, acetic, lactic, and ascorbic acid. Substances must be present in proper concentration to exert their effect. The areas of the body where there is the greatest concentration of sweat seem, he says, to have less tendency to fungus infection, which may, he finds, respond well to the topical applications of these acids in proper concentration. On the other hand, sebum has no fungicidal properties at all. PECK supports his theory by pointing out that the areas of the hands and feet where there is most active secretion of sweat are on the palms and soles, which are seldom infected, whereas the arch of the foot, which is comparatively free from actual sweat, is a favourite site for epidermophytosis; another favourite site is between the toes and in the clefts of the base of their flexor surfaces. PECK states that little sweat is excreted in this position, and that the insensible perspiration there, unlike the sweat secreted in response to heat, has but little fungicidal strength, and this forms an ideal situation for the development of fungi. Acting upon these ideas, he has employed mixtures of Lactic Acid, Propionic Acid, Butyric Acid, and Ascorbic Acid in proper concentrations as local remedies for fungus affections. Four different preparations were employed: (1) 10 per cent. Sodium Propionate in 50 per cent. Alcohol; (2) a powder containing 15 per cent. Sodium Propionate in Venetian Talc; (3) an ointment containing 15 per cent. of Sodium Propionate in Lanolin and Petroleum jelly; and (4) a solution containing all the five acids mentioned above in the strength of about 0.3 per cent. dissolved in 50 per cent. Alcohol. This solution was used only in cases in which fungi could be demonstrated microscopically. Satisfactory results were obtained in epidermophytosis, although PECK is as yet unable to say anything about the permanence of cure. It is not surprising to find that he had no success in the treatment of ringworm of the scalp. On the other hand, in eczema of non-fungous origin, especially in the groin and the axilla, he found that these substances were definitely irritating, suggesting that sweat plays a part in causing eruptions in these areas.—*B.M.J.*

Changes in Nails as Aid to Diagnosis.—R. C. LOW, in *The Practitioner*, May, 1939, maintains that few medical men, when examining a patient, make even a cursory inspection of the nails. Yet a good deal of information can sometimes be obtained from these structures. Their normal growth depends on the general health, and they are quick to show changes when that is interferred with.

When all the nails of the hands and feet show the same alteration the presumption is that it is due either to a congenital anomaly or, in the absence of any adjacent skin inflammation, to some general condition affecting all the nails through the circulation. When only some of the nails are affected and others are quite normal, a local cause should be looked for such as a recent or remote injury, an infection of the nail itself (as in ringworm) or an inflammation or growth affecting the skin or deeper tissues round the nail. The fact that the nails are affected in any general condition indicates to some extent its severity, and so may influence the prognosis.

A change in the colour of the nails may be diagnostic of leukonychia, trophic nerve disturbances, arsenical poisoning, Addison's disease, argyria, chronic mercurial poisoning and diabetic and other forms of gangrene. Apart from any alteration in colour the nails may become altered in shape and size in various ways, as clubbing of the fingers and toes in chronic pulmonary and cardiac conditions. The opposite condition may also occur. The cause of spoon-nail is not known. It may occur in association with nutritional anæmias. As most of the persons in whom it occurs are of the highly strung type, the nervous system may play some part in the ætiology.

Fragility and splitting of the nails are fairly common. Some persons are born with nails which are brittle and tend to split and break off at the free ends. A similar condition may also be acquired by prolonged or frequent contact with chemicals (as in manicuring), especially alkalis. There is also the condition known as egg-shell nail, in which the nail-plate is soft, is semi-transparent, bends easily and splits at the end. This particular change has been reported in association with arthritis, peripheral neuritis, leprosy and hæmiplegia. A somewhat similar condition also occurs occasionally in late syphilis, producing onychia syphilitica sicca. In this condition all the nails are affected. They are dry and atrophic and tend to split. It may be the only visible sign of syphilis but the diagnosis can be confirmed by the Wassermann test.

Longitudinal striation of the nails is a common condition in adults past middle life. In slight cases it is merely an exaggeration of the normal longitudinal ridges of the nail bed, but in well marked cases it is accompanied by splitting of the nails (onychorrhexis) at the free margins. It is common in persons who are absorbing from a focus of infection at the root of a tooth or in the bowel. In addition to cases due to focal infection, lining of the nails is seen in gout and nervous diseases such as neuritis and hæmiplegia. It is also associated with the dry skin and scanty hair of myxoedema. Dryness of the skin and lustreless nails showing longitudinal or transverse lining is also seen in cases of vitamin A, B, and D deficiencies.

Administration of the appropriate vitamins in these cases will restore the nails to normal. A single raised longitudinal ridge running down one nail is the result of a scar at the base of the nail from previous disease or injury. Transverse lines usually known as Beau's

lines, appear on the nails as a result of previous interference with the growth of the nail matrix. If these lines are due to a local inflammatory cause, usually the nails are not all affected.

Shedding of the nails may occur in epidermolysis bullosa, after fevers and in extensive cutaneous diseases. Atrophy of the nails is often associated with ectodermic defects such as extreme thinness or absence of scalp hair. Although not necessarily associated with any mental condition, this change in the nails is fairly frequently seen in mentally defective children. It may also be an acquired condition, and may follow injuries, scars from disease, frostbite, sclerodactylia, Raynaud's disease, radiodermatitis and syphilis. It also occurs in hyperthyroidism and exophthalmic goitre and has been reported after nerve injuries, in leprosy, tabes dorsalis and syringomyelia, and in prolonged debilitating diseases such as cancer.

Thickening and hypertrophy of the nails may occur in chronic eczema with hyperkeratosis of the palms and soles, chronic cutaneous disease, ringworm, paronychia, peripheral neuritis, leprosy, tabes and hæmiplegia. Pituitary and thyroid dysfunctions may be responsible for a few cases, but in the majority of cases there is no evident cause except want of cleanliness and neglect.—*The General Practitioner.*

Ultraviolet Rays in Whooping Cough.—DELTHIL and PEUTEUIL, point out that the multiplicity of methods which have been recommended for the treatment of whooping cough indicates that none of them insure constant successes. On the other hand, it has been recognized that the patient's general condition is of great importance for the prognosis of whooping cough. Consequently, attempts have been made to increase the defenses of the organism. Some investigators, among them BRU and D'AGEN, have recommended the use of ultraviolet rays in cases of whooping cough. However, in spite of the good results obtained by them and by others, this therapeutic method apparently has received little attention. The authors describe their own experiences with this method and their investigations on its mode of action. They found that the attacks of coughing diminished rapidly in number and intensity after the second or third irradiation. The attacks of vomiting, which appear to the families as the most distressing of the symptoms, are influenced even more effectively by the ultraviolet rays. Sometimes the vomiting is arrested before the cough has improved. The disappearance of the attacks of vomiting permits better nutrition, and the diminution of the cough favors sleep. Thus the emaciation is arrested. This is especially important in nurslings, for it is well known that the young organism has only slight resistance to accentuated or prolonged denutrition. The authors further stress that, by reducing the cough and by acting on the general condition, the ultraviolet rays reduce the complications. It being extremely difficult to estimate the end of whooping cough, some investigators, who recognize the favorable effect of ultraviolet rays on the cough and the vomiting, do not admit that the evolution of the disease is

modified by these rays. Nevertheless the authors cite cases in which the course of the whooping cough could be considered as shortened by the action of the ultraviolet rays. The rays exert their action by different mechanisms. The modifications of the blood are constant; not only are the formed elements changed but the phosphorus and calcium contents are noticeably increased. The nervous system is favorably influenced and a regulating influence is exerted on the respiratory and cardiac rhythms. The endocrine and visceral organs react to the rays by way of the peripheral terminations of the sympathetic. Finally the actinotherapy constitutes a veritable shock therapy, which is revealed by fever, agitation with insomnia, temporary leukopenia and hypotension. The erythema and the actinic pigmentation indicate hormonal modifications; there is no erythema without signs of biologic shock. These phenomena have been explained by sudden changes in the serum albumins. The authors assume that the calming effect on the nervous system, the regulating effect on the neurosympathetic tonus or the reestablishment of normal calcemia and phosphatemia have an essential part. They do not recommend the actinotherapy for the onset of the disease but think that the irradiations should be begun between the tenth and fifteenth days. The ray should be applied in such a manner that erythema and pigmentation are produced as quickly as possible. The distance from the source of light is at first 90 cm., and at the second or third session it may be reduced to 75 cm. To test the cutaneous sensitivity of the patient, the authors begin by applying the rays one minute to each side of the body. If no erythema results, the time is extended to three and then to six minutes. If a mild erythema is produced, augmentation is done gradually to avoid a too violent reaction; for instance, the irradiation is extended to seven or eight minutes. After shock, erythema and fever have been produced, the subsequent exposures can be of equal length. The number of irradiations varies between four and twelve.—*J.A.M.A.*

Surgery

The Renaissance of Silk in Surgery.—Aseptic healing of an incision requires a systematic, meticulous, aseptic operating room technique in all its many details, minimum traumatization of the tissues, complete hæmostasis, and, less important, but nevertheless significant, the selection of proper ligature and suture material, writes the Editor of *The Journal A.M.A.* (October 7th, 1939). After more than half a century of use of an absorbable suture, many surgeons now seem ready to discard such materials to return to the use of silk in the repair of clean wounds and incisions. The older masters of the craft who, after unsatisfactory experience, rejected catgut, and returned to silk include such leaders as THEODORE KOCHER, HEIDENHAIN; HAGLER, and WILLIAM STEWART HALSTED.

In a now oft quoted paper, published in *The Journal* in 1913, HALSTED thus summarized his objections to the use of catgut:

"The relatively high cost of catgut, its bulkiness, the inconveniences attending its use and sterilization, its inadequacy, the uncertainty as to the time required for its absorption, and the reaction which it excites in a wound, induced me to discard it completely for clean wounds in the surgery both of the human subject and of animals. With the fine silk in our wounds, which for twenty-three years have, as a rule, been closed without drainage, suppuration almost never occurs. But catgut, even that which we have no cause to believe is not sterile, irritates the wound for some reason, perhaps because it serves as culture medium for saprophytic organisms which are carried into it from the deep epithelium and follicles of the skin. It should be borne in mind that during the greater part of the period of its disintegration the catgut suture is not only not serving its purpose but is playing the role of necrotic tissue, of a culture medium. It is well within reason to expect that the technique may be at least so perfect when silk is employed that the wound will become infected not once in a hundred cases".

Recent clinical and experimental studies seem to bear out HALSTED's position. Thus, SHAMBAUGH and DUNPHY demonstrated in dogs that operative wounds repaired with silk tolerate bacterial contamination better than similar wounds repaired with catgut ; that the healing of experimental suppurating wounds is not appreciably delayed by the presence of buried silk sutures and ligatures, provided a fine grade of silk is used, the sutures are cut close to the knot, and continuous sutures are not employed. They also showed that experimental suppurating wounds repaired with fine silk may heal completely without the removal or the spontaneous discharge of the silk sutures. JENKINS, in his analysis of 1,294 cases of abdominal wound disruption, mentions among the causes imperfections in the catgut and rapid digestion as a result of sensitivity to catgut protein, to chromic acid and to infection. KRAISSL demonstrated the possibility of an allergic reaction to catgut in patients with œdema of the wound edges and disruption of abdominal wounds. He was able to sensitize guinea pigs to plain and to chromic catgut and to chromic acid with the result that 30 per cent. of these animals disrupted the abdominal wound following a cœliotomy. All of a series of twenty-six control guinea pigs healed normally except one. It appears likely therefore that the local reaction in patients allergic to catgut predisposes to infection and favours wound disruption. The incidence of this allergy, according to KRAISSL, increases with a history of allergy or of a previous operation.

Superiority of silk over catgut, according to MELENEY, is due to the following facts: 1. Hæmostasis is better, for the silk knots do not become untied as do catgut knots. 2. The cellular and fluid reaction about silk is minimal while about the catgut it is maximal; silk is almost inert in the tissues, while catgut is dead tissue which must be digested. 3. The use of silk automatically requires the surgeon to be more gentle with the tissues.

WHIPPLE stated at a conference last year that, since silk has been adopted in his clinic, the improvement in wound healing has been so striking as to leave no room for argument as to both immediate and late results. He emphasizes that one should not attempt to use silk unless one is willing to change one's technique and instruments. The essentials of this technique include the use of the finest grades of silk, interrupted sutures, careful hæmostasis and a constant effort to tie sutures without tissue tension.—*The General Practitioner.*

Treatment of Early Syphilis.—HAROLD N. COLE. Bull. Genito-infectious Dis. Boston. May 1939, 3 : 1.

In cases of early syphilis the earliest possible positive diagnosis should be made preferably by 1 or more daily dark-field illuminator examinations of the tissue juices taken from the suspected primary lesion. If these are negative it is then necessary to depend on a serologic diagnosis. These tests should be made weekly until such a period of time has elapsed that there is no longer danger of a submerged syphilis infection becoming active.

Treatment of the patient with early syphilis should consist of alternating courses of injections of a suitable arsenical drug and a Bismuth preparation, given continuously until 30 to 40 injections of each are administered. During the first week, 3 intravenous injections of an arsenical should be given—dosage 0.2 gm., 0.3 gm., and 0.4 gm. of Arsphenamine; 0.3 gm., 0.45 gm., and 0.6 gm. of Neoarsphenamine ; or 0.03 gm., 0.04 gm., and 0.06 gm. Mapharsen. This is followed weekly thereafter with intravenous injections of 0.4 gm. of Arsphenamine, 0.6 gm. of Neoarsphenamine, or appropriate doses of Mapharsen until 10 injections have been administered. It is advisable to administer an injection of a Bismuth preparation with the first few arsenical treatments and with the last such treatment in the course.

The Bismuth salt to be employed for the routine weekly treatment should be a liposoluble compound or a suspension in oil (such as Potassium Bismuth Tartrate or Bismuth Subsalicylate). The dosage should be such that from 80 mg. to 130 mg. metallic Bismuth is administered each week. Ten weekly treatments constitute a course.

Routine serologic tests should be made at the end of each course of treatment, and 2 or 3 days after the first injection of an arsenical in a course a Wassermann test (provocative) should be made. A cerebrospinal fluid test for syphilis should be made early in the course of the disease and repeated at the end of one year or more if the first test is negative. If, under the routine treatment, blood tests become negative, treatment should be continued until the tests have been negative for one year. If, at the end of this period, careful physical examinations, cerebro-spinal fluid tests, and radiologic examination of the cardiovascular system do not reveal signs of syphilis, the patient may be placed on probation and followed up quarterly with serologic examinations for one year and thereafter twice a year. With such a

routine an early case of syphilis will be clinically cured in a large percentage of cases.—*V.D.I.*

Amputations and Amputation Stump. PROF. LERICHE points out that the limbs of some 80,000 soldiers were amputated during the World War; 16 per cent. had to be reamputated once or oftener. In 31 per cent. the stumps had to be retouched, and in the lower limbs 50 per cent. had to be operated on again in order to be fitted with appropriate supports. Apart from a few cases of osteitis or faulty scarring, these readjustments were necessitated in the process of making the stump fit the corresponding artificial limb. Many an original amputation was badly performed, and the blame largely rests on the authors of manuals of operative surgery who have been blind to the prosthetic needs. The duel between the operating surgeon and the prosthetist must be terminated in favour of the latter, the former being often ignorant of the elementary mechanics of prosthetic surgery.

When amputating the surgeon should have three main considerations in mind—vital, neurological and prosthetic. With regard to the first, he must make his operation as bloodless as possible, for loss of blood, however slight, may be an essential factor in that vasomotor depression associated with the term "shock". For the same reason, injury to the nerves must be avoided, for centripetal stimulation of a nerve easily leads to vasomotor depression, the consequent fall in blood-pressure being particularly serious for anæmic patients. The large nerves of the limbs must be blocked by an anæsthetic before they are severed, for even if the patient is under a general anæsthetic, such nerve excitation may cause shock. LERICHE injects 1 to 2 c.c. of absolute Alcohol or 1 c.c. of pure Carbolic Acid into nerves before cutting them. To avoid local infections, likely to prove fatal at a later stage, it is well to leave the amputation wound open, and not to close it more than is necessary for making the ends of the muscles meet over and form a pad for the bone.

As to the neurological considerations, the operator must avoid any act calculated to render the stump tender or painful. All unnecessary injury to nerves should be avoided; they must not be pinched nor pulled on. All forms of "lateral attrition" favour the formation of a scar, which may in time become painful.

It is the disillusioning experience of prosthetists that CHOPART'S disarticulation is useless in 95 per cent. of the cases in which it has been performed. The same may be said of calcanean and subastragalus osteoplastic amputations. Disarticulation of the knee, with or without retention of the patella, and amputations of the Gritti type raise such prosthetic difficulties that they should be discontinued. Better to amputate the thigh at the junction of the middle with the lower third of the bone than to attempt disarticulation. All amputations about the upper epiphysis of the tibia should be discouraged. For the upper as well as for the lower limbs disarticulations are

undesirable, apart from carpo-metacarpal disarticulations, which are useful. More than any other structure, the arm is subject to neurological complications following an amputation. Here the greatest care must be taken to avoid injury to the nerves, for the internal cutaneous, the median and the cubital are very fragile nerves requiring the most delicate handling. As he divides the soft structures, the operator must proceed cautiously on coming to a neuro-vascular strand, whose contents must be carefully exposed, not "brutally severed", as used formerly to be the case.—*Clinical Journal.*

The Fate of Swallowed Foreign Bodies.—Although many cases of swallowed foreign bodies have been reported, little has been written on the question whether they should be removed. At the Section of Surgery of the Royal Society of Medicine Mr. A. M. H. SIDDONS endeavoured to answer this question by means of the records of three London hospitals—St. George's, the Royal Waterloo, and the Belgrave, which have a high proportion of children's beds. It is children and the insane who most frequently swallow foreign bodies. He collected records of 126 patients admitted to these hospitals. It should be borne in mind that these patients were selected by surgeons as sufficiently dangerous to require treatment as inpatients. It is not possible, therefore, to draw conclusions from them as to the percentage of all swallowed foreign bodies which require removal. Indeed, this cannot be ascertained, as many cases never reach the physician. In 107 of the 126 cases (85 per cent.) the foreign bodies were passed naturally, and in only four did perforation or obstruction occur. The remaining thirteen foreign bodies were removed, as the surgeon considered it dangerous to leave them or because it did not appear to him that they would be passed naturally. These figures may be compared with American ones reported by HENDERSON and GASTON in *The Archives of Surgery* in January, 1938. They found nine instances of perforation in about 800 cases, most of which were not admitted to the hospital. They emphasize that many of the patients never seek medical aid, and that therefore this figure of about 1 per cent. for perforation is too high.

SIDDONS divided his cases into three groups: Blunt objects (sixty), long objects (eighteen), sharp objects excluding open safety pins (forty), and open safety pins (eight). It is interesting how long blunt objects stop in one place in the alimentary canal, only to progress again for no apparent reason. It might be expected that objects which failed to pass the pylorus for a whole day would never do so, but in some cases they were watched in the stomach for weeks, and then went on their way. The average time for the objects to pass in the entire series was six days, and in each group about the same. What is more important, they did not seem to do any harm while stationary. There are many records of insane persons and professional swallowers who have retained objects in their stomachs for long periods without ill-effects. In only one case of the series was a body arrested at the ileocaecal region, causing intestinal obstruction.

In the sixty cases of blunt objects there were eight operations for removal. Excepting the case mentioned there were no symptoms of harm. The operations were performed because the surgeons thought that the object would not pass, and had they been left probably most of them would have been passed naturally. SIDDONS thinks that there are very few objects able to pass down the oesophagus which will not pass through, provided they are not sharp or unduly long. After the pylorus, the ileocaecal region seems to be the only other likely site of arrest.

Long blunt objects include screws, nails and Kirby grips. They usually pass the pylorus but find the curves of the duodenum difficult. After this they usually find no obstruction. In the eighteen cases only one operation was performed; removal of a nail from the caecum on the second day. SIDDONS believes that it would have been passed naturally if it had been left. All the other objects were passed.

Sharp foreign bodies include needles, pins and open safety pins. Excluding the last there were forty cases, of which the object was passed naturally in thirty-seven. Not one perforated. In three cases the object was removed from the stomach because the surgeon did not think it safe to leave. The open safety pin presents a special problem. In four of the eight cases it was removed by operation, with one death. Of the other four, one perforated the stomach and was removed safely; the other three were passed naturally. Eight cases are not enough to form a basis for evaluating the risks, but there is no doubt that they are greater than with any other object. SIDDONS thinks, however, that they should be given a chance to pass, like other objects. Nearly all blunt objects pass naturally, and should be given from four to six weeks. He does not agree with the recommendation to give bulky foods, as they may hasten obstruction and even in the case of sharp objects do not serve any useful purpose. He advises an ordinary diet and no purgatives.—*Journal A. M. A. thr' General Practitioner.*

The Use of Heparin in Blood Transfusions, by S.W. SAPPINGTON. *Jour. Amer. Med. Assoc.* 113 : 22, 1939.

A stable, potent, pure heparin was used as the anticoagulant in forty blood transfusions and appeared to be without toxic or other undesirable effects on donor or patient. It was used in two ways: first, *in vitro* to heparinize the drawn blood from the donor; second, *in vivo* to heparinize the donor by intravenous injection. The first corresponds to transfusion of citrated blood and differs from it only in the anti-coagulant. The second method is simpler in that the heparinized blood is withdrawn from the donor and introduced into the patient without any treatment outside the body. Seventeen patients were given transfusions by the first method and twenty-three by the second, all with 500 cc., since a larger amount of blood was thought a better test of the procedure. These were all done by a gravity method paralleling the citrate technic in order that comparison of the two anticoagulants could be better made.

All forty transfusions were successful in that the entire amount of blood was transferred and the donors and patients suffered no ill effects. But it was found that for a successful, uninterrupted transfusion a larger needle was necessary for introduction into the patient than in the citrate method, a 16-gage needle as against the 18-gage commonly used in citrate transfusion. Whether the heparin method can displace the well-established citrate method remains to be seen. It would seem to offer two advantages. The heparinization of the donor makes the procedure more simple and almost a one-man job. The therapeutic value of heparin may be of advantage in the postoperative transfusions.—I. C.—*J.P.I.M.A.*

Intracardiac Injection of Atropine in Prolonged Anæsthetic Syncope.—Reporting the successful use of simultaneous intracardiac injection of Adrenaline and Atropine in a case of prolonged primary cardio-respiratory anæsthetic syncope, R. SOUPAULT (*Presse medicale*, March 1, 1939, 47, 424) recommends the more general use of intracardiac injections of Atropine in cases of cardio-syncope and also in other anæsthetic accidents. Adrenaline has been in favour as a cardiac stimulant for some years, and there is no doubt that in cases of primary Chloroform syncope this drug is most effective, producing 80 per cent. successes. Several authors, however, have considered the results of intracardiac injection of Adrenaline in other forms of anæsthetic collapse to be inconstant, and among those holding that opinion are GARRELON and PASCALIS, who have used Atropine by intra-cardiac route for eight years. Twenty-five cases of prolonged cardiac syncope of diverse origin were cured by intracardiac injections of Genatropine according to a short report by VALERIO of Rio de Janeiro, but the combination of Atropine-Adrenaline for the treatment of primary syncope in man had so far not been reported, except in the experimental studies carried out by CASTELLO. For this reason the author's case is of considerable interest, and also because the collapse occurred during the administration of anæsthesia-narcosis after a previous spinal anæsthetic. The patient, a man of forty-seven years, was undergoing an operation for perforated gastric ulcer, which involved a prolonged intervention. He was given Percaine as a spinal anæsthetic in the usual manner, and after the operation had been in progress for one hour and a half showed signs of returning sensibility, and consequently narcosis-anæsthesia was proceeded with, using the method of SCHLEICH. After about three minutes the patient suddenly collapsed—the pulse stopped, breathing ceased, no cardiac movement could be felt, and the man's face was deadly pale (no cyanosis). Caffeine, artificial respiration, Lobeline, and cardiac massage were without result. An intracardiac injection of 1 mgm. Adrenaline followed immediately by 0.5 mgm. Atropine was made and the cardiac massage continued: in a few moments slight cardiac movement was noted, and after fifteen minutes the man's condition permitted the continuation of the operation without any further anæsthetic being administered. There was a somewhat stormy post-operative course followed by complete recovery,

and an electrocardiogram taken six weeks after the operation showed no signs of abnormality.—*Practitioner.*

The Treatment of Hydrocele with Injections of Picric acid. — Various irritating solutions have been recommended for injection into the sac of a hydrocele, but in view of the fact that the results are uncertain and that the injection is often followed by incomplete obliteration with a recurrence of the hydrocele, preference is generally given to operative treatment. More satisfactory results seem to have been obtained with injections of Picric Acid. J. Di Pace (*Minerva Medica*, January 20, 1939, 30, 1) has used Picric Acid for several years and his results appear to have been excellent. The author applies the usual technique of tapping a hydrocele; the patient having been placed in a recumbent position, the swelling is fixed with the left hand and the scrotum is rendered tense over the hydrocele. The site of the injection is then painted with a 10 per cent. alcoholic solution of Picric Acid and a 2 mm. trocar and cannula is thrust into the hydrocele for about ¾ inch, care being taken to avoid the testis After having withdrawn the trocar and tapped the hydrocele a syringe is applied to the cannula and 50-70 c.cm. of a saturated aqueous solution of Picric Acid at about 100°F. are injected in the direction of the parietal layer of the tunica vaginalis. The solution is prepared by dissolving 1½ drachms of picric acid in 5 ounces of warm distilled water. In order to bring the whole tunica vaginalis in touch with the solution the scrotum is gently massaged for five to ten minutes and the solution is then withdrawn. Another 50-70 c.cm. of Picric Acid are then injected and again aspirated after five to ten minutes. The cannula is then removed, the puncture is sealed with Collodion and a sterile dressing and a suspensory bandage are applied. The next day the patient is allowed to follow his occupation. Patients of various ages up to 70 years were treated and the author found that the method was practically painless and that the immediate and remote results were excellent. Some cases were followed up for twenty years without recurrence. Many patients showed a yellow discoloration of the conjunctivæ and sometimes of the skin on the day following the injection, but this sign usually disappeared after twenty-four hours. The intensity of the discoloration depended on the amount of the Picric Acid absorbed. Most cases also showed a slight transient œdema of the scrotum. In order to avoid shock special care was taken to inject the warm solution slowly and to keep the patient in a recumbent position. A few patients showed a certain degree of hypersensitivity to Picric Acid with diarrhœa and mild hæmaturia appearing between the third and eighth days after the injection. These complications could be avoided by leaving only a trace of Picric Acid in the sac after the injection.—*The Practitioner.*

Laryngeal Diphtheria.— P. BAYER, *South African M. J. 13 : 47* (Jan. 28) 1939.

BAYER reports on a study of 1,291 patients with diphtheria admitted to the Fever Hospital, Johannesburg, South Africa, during the period from 1930 to 1937. Of these 242 had laryngeal diphtheria and 124 required tracheotomy. The incidence of diphtheria in Johannesburg is less than 100 cases per hundred thousand of population whereas that in Great Britain is 140 to 160 per hundred thousand. In children under 6 months of age diphtheria is almost unknown and very uncommon in those under 1 year of age. Its frequency then increases very rapidly, reaching a maximum in children between the ages of 1 and 2 years. Thereafter it declines slowly and in children beyond the age of 8 becomes distinctly rare. The majority of patients have a temperature of 101 to 102 F.; higher temperatures are very uncommon. In at least 25 per cent of cases of faucial diphtheria a positive diagnosis can be made immediately from direct examination of a smear. In about 85 per cent of cases of faucial diphtheria swab material will be found positive after twenty-four hours' culture and in 95 per cent it will be found positive after forty-eight hours. In regard to laryngeal diphtheria, however, after tracheotomy only 60 per cent of the patients yielded positive cultures from swab material taken from membrane found at operation or from the trachea itself. Of nontracheotomized patients, only 50 per cent gave positive cultures from swab material. Faucial diphtheria occurs in over half the patients with laryngeal diphtheria and is an additional help in diagnosis. The results of tracheotomy in Johannesburg, with a mortality of 33 per cent, are very good when compared with those from tracheotomy elsewhere, but not as good as those from intubation. Whether tracheotomy or intubation is done, the mortality rate is exceptionally high in children under 1 year and in children from 1 to 2 years of age. Although in very young children intubation gives better results, in older children tracheotomy gives slightly superior results. In the patient with acute streptococcic laryngitis tracheotomy usually does not bring that intense relief from dyspnœa that it gives in a patient with diphtheria. The prognosis in diphtheria must be very guarded. In 41 fatal cases 21 deaths were due to spread of the diphtheritic process into the trachea and lungs, 13 deaths to cardiac failure from shock and toxemia and 5 deaths to bronchopneumonia. The complication of bronchopneumonia is by no means always fatal; of 13 patients only 5 died. The first essential in treatment is to regard laryngeal obstruction in a child as diphtheritic until it is proved otherwise. With faucial involvement a large dose of antitoxin, as much as 50,000 units, should be given. Experience is the best judge in deciding whether to perform a tracheotomy and when. Tracheotomy performed after intubation carries a frightful mortality. The author prefers low tracheotomy.—*A.J.D.C.*

Obstetrics and Gynæcology

Progesterone for Recurrent Abortion. MACGREGOR and STEWART used Progesterone in the treatment of twenty women who had had two or more previous abortions. Prior to this treatment these women had in all sixty-five pregnancies with only ten live births. In no instance could any cause be found for the recurrent abortions—other, that is, than the hormone deficiency revealed during investigation. Of the twenty-two pregnancies during which Progesterone was given there were, on the other hand, only eight which ended in abortion, whereas fourteen resulted in a living child at term. The results are in full agreement with those reported by other workers. The use of Progesterone therapy in cases of recurrent abortion appears to be warranted. The author has included in the series as "failures" cases in which treatment was not begun until abortion was actually threatening. He believes that if progesterone had been given early enough the proportion of successes would have been increased further. The majority of the failures occurred early in the investigation, when extremely small doses (1 mg. twice a week) of Progesterone were being used. More recently the dose has been increased first to 3 mg. and later to 5 or even 10 and 20 mg. twice a week, with intensive therapy in cases of threatened abortion. Even these doses are surprisingly small to be effective, and there is almost an air of the miraculous about the results reported by various observers on doses which are almost infinitesimal in comparison with the amount of Progesterone produced in normal pregnancy. The mode of action of Progesterone is obscure, but there is no doubt that its presence in adequate amounts is necessary for the maintenance of pregnancy. The simplest explanation of the action of Progesterone therapy in preventing abortion would be that it provides, by replacement, an adequate supply of an essential hormone until, whether by its stimulant action on the placenta or by an independent placental development, the deficiency is compensated from natural sources. It may well be, and indeed it is suggested by many facts, that while a temporary deficiency of Progesterone does not in itself necessarily lead to abortion it does make abortion an almost inevitable consequence of slight trauma or strain which would otherwise be without effect. A study of the hormone excretion in normal pregnancy has suggested that the critical period when the corpus luteum secretion decreases and the placenta is becoming a secretory organ is near the ninetieth day of gestation. Abortion generally occurs at this time. In recurrent abortion, however, the critical period may be much earlier, as the hormone excretion may be at a subnormal level at a very early stage. Although an injection of a few milligrams of Progesterone represents only part of a normal day's production, it gives for a short time an abnormally high concentration of the hormone in the blood. It is possible that this high concentration, repeated at intervals though not lasting long on each occasion, may provide a sufficient extra stimulus to the developing placenta and so enable it to produce a sufficient amount of hormone.—*J. A. M. A.*

PROCEEDINGS OF SOCIETIES, ASSOCIATIONS, ETC.

Andhra Provincial Branch of The Indian Medical Association.

A special meeting assembled at the invitation of Colonel Shastry, I.M.S., the President, The Kishna District Branch of the I. M. A., at his bungalow at 2-30 p. m., on Wednesday, the 20th March, 1940.

Representatives of the undermentioned branches of the I. M. A., namely, Vizagapatam District, Rajahmundry Town, West Godavary District, Bezwada Town and of the Krishna District, attended the meeting and transacted the following business :—

1. The Andhra Provincial Branch was established.

2. The whole gathering converted itself into a Committee for drafting the Constitution of the Provincial Branch and it was directed that the draft may be circulated to all the Branches of the I. M. A., mentioned above, and on receipt of their approval the Constitution will be formed and then the Provincial Council will be elected.

3. Colonel Shastry was requested by the gathering to do all the preliminary work and carry on all correspondence until the Provincial Council is elected and begins to function.

The Medical Practitioners' Association, Nuzvid.

An ordinary meeting of the above Association was held on Sunday, the 31st March, 1940, at 4 p.m. in the Government Hospital Nuzvid, Dr. C. Applachari presiding.

The meeting resolved: (1) to hold hereafter meetings once in 2 months instead of every month and (2) to reduce the annual subscription to Re. 0-8-0 from Rs. 2/- in view of the fact that most of the members are members of the Kistna Branch of the I. M. A. and regularly attending the meetings of the latter Association paying heavy subscriptions.

A case of syphilitic affection of the nose was demonstrated by Dr. A. Venkateswararao of Agiripalli.

The X-ray picture of a female suffering from osteomalacia that developed a peculiar scissor-like deformity of the lower extremities was demonstrated by Dr. N. Rama Rao of Gollapalli together with its case history. Dr. N. Rama Rao then mentioned also of a case of cancer cervix which was diagnosed and declared inoperable, now under his care, and said that the probability of a gumma of uterus struck him and that the treatment therefore now being given by him seems to be a little encouraging and hopeful. He also promised to give to the members sometime later the results of his antisyphilitic treatment in this particular case.

Some more cases of clinical and surgical interest were discussed along with the above and the meeting came to a close by 6-30 p.m.

Anatomical Society of Madras.

"A meeting of the members of the staff of the Anatomy Departments of the Madras Medical College and the Stanley Medical College, was held at the Central Institute of Anatomy, Madras Medical College, on the 6th instant at 5 p. m. In the course of the meeting, a scientific association—The Anatomical Society of Madras.—was formed. Professor P. K. Koshy, B.A., M.B., F.R.C.P. (E)., was elected President, Dr. O. Nayinan, M.B., B.S., Vice-President and Dr. U. V. Nayak, M.B., B.S., Ph.D., (Lond.), Hony. Treasurer and Secretary."

BOOK REVIEWS

Whitla's Pharmacy Materia Medica and Therapeutics—(13th Ed.) *Revised by J. H. Burn*, M.D., Professor of Pharmacology in the University of Oxford, and *E. R. Withell*, B.Sc., *B. Pharm.*, Ph.C., A.I.C. Head of the Department of Pharmacy and Biology at Birmingham Central Technical College, London; Bailliere, Tindall and Cox, 1939, Pp. 536, Price: 12s. 6d.

The 13th edition of Whitla's well-known book on Pharmacy Materia Medica and Therapeutics, has undergone drastic revision. The section on therapeutics, which was previously arranged alphabetically under the names of drugs, has now been replaced by a synopsis of applied pharmacology, full of the latest information. This change is really one in the right direction, as the earlier arrangement had the disadvantage of giving too much prominence to details of information of little medicinal value and thus obscuring the importance of many remedies, of the use of which the medical man is still too little informed.

The first section is the section on Therapeutics. In this, the first six chapters are devoted to the phenomena of variation, the action of hormones and the action of vitamins. The remaining chapters give a brief account of the action of drugs and of substances used in chemotherapy.

The second section on Pharmacy should surely help a doctor in writing prescriptions. The last section is on Materia Medica. The present edition is certainly an improvement on its predecessors. It is well got-up and will be a very useful addition to the library of every medical practitioner.—*U. K. R.*

1939 Year Book of General Surgery—*Edited by Evarts A. Graham*, A.B., M.D., Professor of Surgery, Washington University School of Medicine, Chicago: The Year Book Publishers: London: H. K. Lewis and Co. 1939, Pp. 796, Price 15 sh.

This Year Book which summarises the surgical literature for the preceding twelve months, will enable the reader to have a bird's eye-view of the current trend of events in Surgery. Among the chapters that may be mentioned with special emphasis are those on Anesthesia, Analgesia, Fractures, Wound Healing, Surgery of Pulmonary Tuberculosis, Appendicitis, and Orthopedic Surgery. The author's somewhat pungent criticisms add to the interest of the book. It is well got-up and well worth perusal.—*U. K. R.*

Vade Mecum of Medical Treatment—*By W. Gordon Sears*, M.D. (Lond), M.R.C.P. (Lond), Medical Superintendent, Mile End Hospital, London; Edward Arnold and Co. Pp, 367, Price: 10 sh. 6 d.

The author in this book has attempted to provide, in a convenient form and handy size, an account of the treatment of those diseases most commonly met with in general medical practice. The conditions dealt with are arranged alphabetically and a full index has been provided at the end of the book. Tables mentioning the various doses, weights and measures, approximate equivalents and domestic measures, Percentage solutions, Vitamin content of foods, Obstetric table and a description of tests such as Glucose Tolerance Test, Urea Concentration Test, Laevulose Tolerance Test, and other news of practical importance, together with a Posological Table, make the book very useful. It may be useful as a ready reference. The only drawback that we, in the tropics, may find about the book is the scant attention paid to Tropical Diseases. The book is well got-up and will prove a valuable compendium to the general medical practitioner.—*U. K. R.*

The 1939 Year Book of General Medicine—Edited *By George F. Dick, J. Burns Amberson, George R. Minot: W. B. Castle, W. D. Stroud, and George B. Eusterman*: The Year Book Publishers, Chicago. Pages 848, Illustrations 148, Price: $ 3-0-0.

The Year Book deals with the past year's advances in general medicine under five different heads (i) Infectious Diseases, (ii) Diseases of the Chest, (iii) Diseases of the Blood and Blood-Forming Organs (iv) Diseases of the Heart and Blood Vessels, (v) Diseases of the Digestive System. The contents have been selected from nearly 6000 articles appearing in journals in all the progressive countries of the world. Latest developments, which are of immense use to the general practitioner and also to the specialist in internal medicine, are presented in compact detail in this book. This handy volume is a very useful guide to the general practitioner to keep him abreast with the progress in Medicine and this book must find a place in the library of every medical man.—*K.L.N.R.*

A Text Book of Medical Jurisprudence and Toxicology.—*By Rai Bahadur Jaising P. Modi*, Butterworth & Co., (India) Ltd., Bombay. Sixth Edition 1940, Pages 820, Illustrations 158, Price: Rs. 15.

The publication of this new edition within the space of three years is a definite proof of its popularity and usefulness. Many alterations and additions have been made and new cases have been introduced with a view to illustrate important and interesting medico-legal points. The get up, the printing and illustrations are admirably done, unlike

many Indian text-books, where the paper and printing are of poor quality. We do not think that there is any necessity to recommend this book to the student or general practitioner, as it is a well-known text book and has practically displaced all other books of Jurisprudence in teaching Institutions.—*K.L.N.R.*

Midwifery (for Pupil Midwives, Teacher Midwives and Obstetric Dressers) *By R. Christie Brown* M.B., M.S., F.R.C.S., F.R.C.O.G., *and Barton Gilbert* B.Sc., M.D., F.R.C.S., M.R.C.O.G. Edward Arnold & Co., London, Pages 796, Price : 15 sh.

The first section of the book is a new departure from other text books, as it deals with scientific principles such as diffusion, osmosis chemical changes in the body, etc., a knowledge of which is important to the midwives to correctly appreciate certain aspects of Midwifery. General Anatomy and Physiology, Special Anatomy and Physiology are briefly described to educate the pupil on fundamental principles so that she may understand better the later chapters on Normal Labour, Puerperium, Management of Labour and Puerperium etc. A chapter is also devoted to the Management of the Child and another for Obstetric Operations. It is a complete and exhaustive book, very useful for pupil midwives and also for practising midwives for reference.—*K.L.N.R.*

Indigenous Drugs of India—*By Dr. J. C. Ghosh,* B.Sc., (MANCHESTER), Principal, School of Chemical Technology, Calcutta. IInd edition, revised and enlarged, with a Foreword by Col. R. N. Chopra, C.I.E., K.H.P., M.A., M.D. Sc. D., (CAN.), F.R.C.P., (LOND.), I.M.S. (Retd.) Director, School of Tropical Medicine and Biochemical Standardization Laboratory, Calcutta. Published by P. K. Ghosh, School of Chemical Technology, Calcuta, pages 243, Price : Rs. 3/– net. (Postage extra) or 5s.6 *d.* Post free.

There is none other more intimately connected with indigenous drugs of India than DR. J. C. GHOSH who has spent almost his life time in research work in this line. His book on 'Indigenous Drugs of India', therefore has the stamp of authority on it. The importance of the book is further enhanced by the foreword given to it by Col. R.N. Chopra I.M.S. (Retd.), than whom no greater authority in India exists at the present day on the subject of Indian drugs. There is no gainsaying the fact that India stands to lose not only economically but also industrially by exporting herbs and drugs obtainable in the backyards of houses, in their rich forests and in their high mountain ranges, to Western countries and importing therefrom finished products, such as pills, tinctures etc. He has rightly pointed out in his book "that practically all drugs found in the British Pharmacopoeia could be grown in India and that more than 50% are indigenous to India (including Ceylon and other adjacent islands)". Further, he goes on to observe that "the action of drugs can be tested scientifically and exactly only when their active principles have been extracted. This

means laborious work and the results take a considerable time. When once this exact knowledge has been obtained, the use of crude drugs happens to be the keynote of cheapness and will have to be employed among our population for many years to come. At present, the aim of superior training in Medical Colleges seems to be to turn out specialists with academic degrees who require Rs. 8 to Rs. 32 a visit and who prescribe treatment equally expensive. What the ryot requires is a qualified practitioner who is willing to treat him for eight annas and for the treatment to cost 2 annas". These are no vain dreams as India can be made self-contained in the matter of drugs and consequently, expenses for treatment of patients can be considerably reduced if only the Government of India have the will to do it by establishing wider and more vigorous research in Indian drugs. The author has taken considerable pains in this book to point out what all drugs could be standardized and utilized in India. The book also contains three appendices, the first, list (in nine languages)of vegetable drugs in India with their natural orders, habitat and therapeutic uses, the second on useful prescriptions and the third, on pharmaceutical machinery and equipment for drugs manufactured on a commercial scale with a general index and therapeutic index.

This book is well-printed and nicely got up and we heartily commend it to the public, the Medical and the Pharmacist professions.—*S.T.*

PREPARATIONS AND INVENTIONS

Gynomin—(formerly known by the name of Speton),Manufactured in England by Messrs. Coates and Cooper Ltd.,

The problem of family limitation is engaging the serious attention of all the peoples of the world for reasons of health and economy. Several methods–both mechanical and chemical–have, therefore, been devised to control birth. The medical man is sometimes confronted with the difficulty of suggesting some simple, efficient, harmless, inexpensive and inoffensive method of birth control. To add to these difficulties, the rapidly growing literature on the subject contains too many controversial points to confuse even the best of minds. All workers agree that the ideal contraceptive should "act in an absolutely reliable manner and yet must not exercise any unpleasant influence whatever, either upon the body or on the mind. The application of the remedy must be simple and easy and the composition of such a character that its use presents no disillusion to the poetry of love relations". These qualities are said to be possessed by Gynomin, formerly known as Speton, which is manufactured by Messrs, Coates and Cooper Ltd., London. It belongs to the second group and claims to be harmless and efficacious and is available at all chemists in tablet form.

Stibophen. Burroughs Wellcome and Co., to meet the demand for the English product, announce the manufacture and issue of Stibophen by licence under the Patents etc. Emergency Act 1939 relative to the English Patent No. 376346, the objective substance of which is Fouadin (Stibophen).

Stibophen is a trivalent antimony compound of Sodium Pyrocatecholdisulphonate; it is indicated in the treatment of schistosomiasis and other tropical diseases.

Urea Sulphazide-T.—We have received from Messrs. Union Drug Co., Ltd. Calcutta, samples of their new preparation Urea-Sulphazide-T ($NH_2CO\,CH_3\,NH{-}C_6\,H_4{-}SO_2\,NHCO\,NH_2$). It is claimed that this preparation is very useful in cases of pneumonia and gonorrhœa and that it has been extensively tried in several hospitals in this country. It has been reported that this drug has been received very favourably by the profession in this country. In Madras, Messrs. Appha and Co. are the sole-agents and the drug is obtainable from them. We would recommend it for trial in these two diseases.

NOTICE

Schering (India) Limited

Announce that they are in a position to allocate limited quantities of their specialities for urgent and immediate requirements and that stocks are adequate to meet normal demands for several months to come.

Their medical clientele are informed that it is not necessary to purchase abnormal quantities of their products with a view to hoarding them, in the mistaken apprehension that supplies will run short. Enquiries and orders will be attended by Head Office: Bombay—Yusuf Buliding, Mahatma Gandhi Road. Branch: Calcutta.—4, Dalhousie Square East, or to our sole distributors in Southern and Northern India, Messrs. Vikram Parmasey and Co. Madras,—2, Bunder Street, G. T.,; Lahore—Devichands Bldg, The Mall.

School of Tropical Medicine, Calcutta

"The three months' course of instruction for the License in Tropical Medicine will begin from the 15th July 1940. Applications for admission should be submitted as early as possible to the Director, School of Tropical Medicine, Calcutta."

Stibophen.—Burroughs Wellcome and Co., to meet the demand for the English product, announce the manufacture and issue of Stibophen by licence under the Patents etc. Emergency Act 1939 relative to the English Patent No. 376346, the objective substance of which is Fouadin (Stibophen).

Stibophen is a trivalent antimony compound of Sodium Pyrocatecholdisulphonate; it is indicated in the treatment of schistosomiasis and other tropical diseases.

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INDEX TO ADVERTISERS, APR. '40.

SERVICE TO FELLOWMEN.

What better service can we do to our fellowmen than give free and sound advice on matters of health and hygiene? We therefore request medical men to write articles on vital health topics such as, Diet, Nutrition Prevention of Disease, Care and feeding of infants, Child training, Management of sick, Guidance for the prospective mother, Healthful beauty, Exercise, Occupation, Recreation, Contagious diseases, School hygiene, Sanitation, First Aid in Accidents etc. for publication in Health. Specimen copy of the Journal and further particulars can be had from The Antiseptic, 323, Thambu Chetty Street, G. T. Madras.