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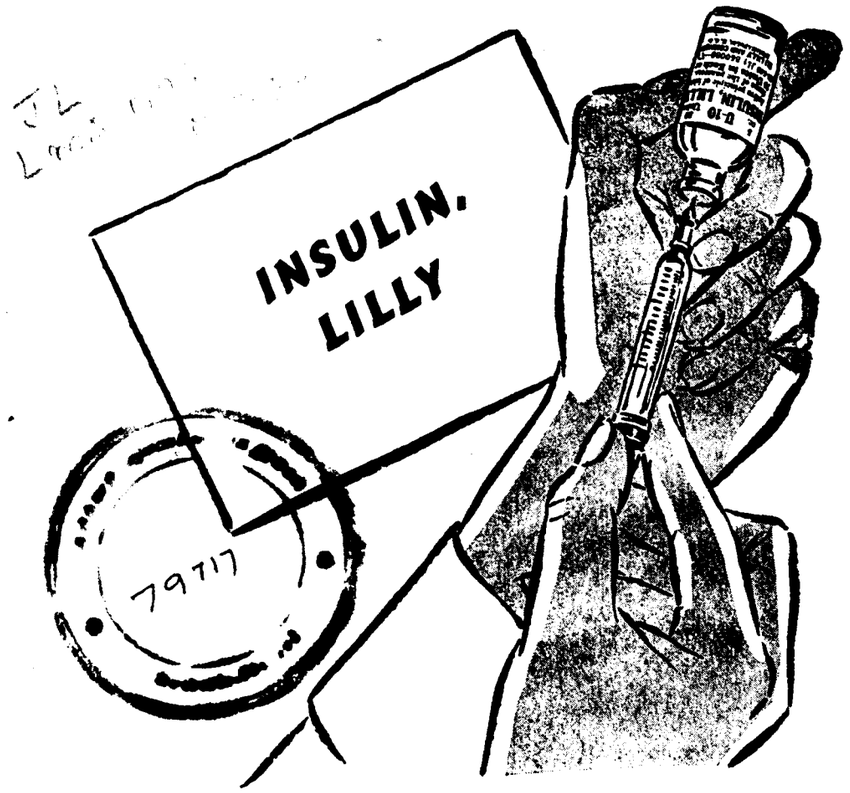

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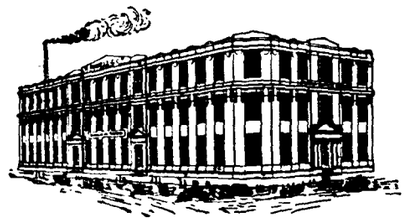

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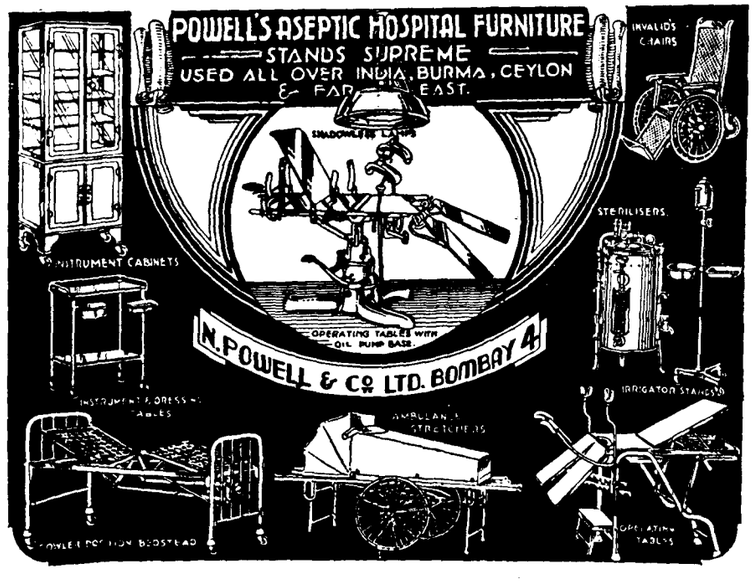

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ORIGINAL ARTICLES

Peroral Endoscopy with Case Reports*

BY

M. Sanjiva Rau, M.B.B.S.,

Ear, Nose and Throat Institute, 20, Thambu Chetty Street, Madras

ENDOSCOPY—*i.e.*, the examination of body cavities and passages by direct vision through illuminated telescopic tubes, has established itself as one of the most useful of the recent advances in Medical Science, being an invaluable addition to our equipment for the early diagnosis and treatment of several affections, and as examples, I have only to mention Cystoscopy, Urethroscopy, Proctoscopy etc., the usefulness of which is unquestioned. In this paper, I propose to deal briefly with "Per-oral endoscopy" *i.e.*, the examination of the Larynx, Trachea, Bronchi and Oesophagus by direct vision through the mouth, which, apart from being a life-saving measure in many instances, promises to throw new light on the pathology and treatment of some pulmonary and œsophageal diseases, and helps the early diagnosis of many intrathoracic conditions. The study of life is in life itself, and it is idle to expect to learn the nature of some of the dysfunctions of the delicate neuro-muscular apparatus or of sympathetic imbalance in this region at the post-mortem room. The thorax has long been puzzling the surgeon with its many problems and has been

* Specially contributed to the "Antiseptic".

the exclusive field of the physician and radiologist. Peroral endoscopy offers a useful field for teamwork, for as Jackson puts it, " while the physician looks at the chest from the *outside*, the endoscopist from the *inside* and the radiologist *through it* ", the chest will before long cease to be elusive.

Range of usefulness of Peroral Endoscopy.—1. In the field of foreign bodies and strictures in the food and air-passages, endoscopic methods of treatment have achieved marvellous successes, displacing the older probangs, coin-catchers, blind bouginage etc. in which fatalities were frequent enough, and success depended more on luck than on scientific precision.

2. Bronchoscopic insufflation of oxygen is a life-saving measure, based on excellent principles, in asphyxias due to hanging, drowning, strangulation, electric shock or poisoning by irritant gases, where in addition bronchoscopic aspiration can also be done to suck out the drowning fluids.

3. Intra-tracheal anaesthesia, is another field of usefulness, in which the so called " death-zone in the neck is entirely eliminated and operations around the air-passages can be performed without the danger of aspiration of blood or septic material. It is invaluable in intrathoracic operations, for the lung can be kept in any degree of inflation when the pleural cavity is opened, rendering unnecessary the intricate negative-pressure chambers formerly used.

4. Drainage of the lung by bronchoscopic aspiration and lavage has established its merit in the treatment of lung abscesses, Bronchiectatic cavities and drowning of the patient in his own secretions due to œdema. Endoscopic investigation seems to me to be the right way to explore the possibilities of drainage of the lung generally in all inflammatory affections. Recent work and observation on the pathology of collapse, emphysema, œdema and pneumonia produced by bronchial obstruction of varying degrees, by foreign bodies, vegetable, metallic irritant or otherwise has contributed such a large amount of thought-provoking material that I will not be surprised if and indeed, I do expect in the near future, our ideas of the pathology and spread of pneumonias in general to be thoroughly revised. I have in mind the bronchial obstruction caused by thick, tenacious sputum (especially, in children and old debilitated patients with poor expectorating powers,) stagnating in the smaller or larger tubules, with paralysed cilia unable to propel the sputum, producing collapse, œdema and inflammation and helping the progress of pneumonia. How far endoscopic drainage can influence these conditions is too early to

say, but the problem is there for investigation. To give an example: though for a long time we knew the beneficial effects of rest to an inflamed part, it is only now that measures like artificial pneumothorax and phrenic avulsion have come to stay. In the same way, adequate drainage to the products of inflammation is the next principle which has to be investigated by endoscopic methods for the treatment of lung inflammations.

5. Endoscopic investigation is a rational step in the examination of inexplicable cases of Haemoptysis, cough, bronchial obstruction, lung abscesses and chronic pneumonias, recurrent paralysis, and many other obscure thoracic conditions, or when fungus casts are expectorated.

6. Endoscopic methods of treatment of new growths, polypi, diverticula etc. of food and air passages, removal of specimens for biopsy are very valuable and sometimes the only methods of tackling with these affections.

7. Investigation of all cases of Dysphagia, where the cause is not apparent, and surgical treatment of some diseases of œsophagus.

8. Pneumography, *i.e.*, the mapping out of the bronchial tree as an aid to X-ray diagnosis ; under direct vision lipoidal can be very accurately placed in the region to be investigated.

The above enumeration is a brief review of the indications for peroral endoscopy in diagnosis and treatment, but whatever its intrinsic or theoretical merits may be, it must fulfil certain important conditions before it can become more popular, as routine method of investigation, namely :

(*a*) It must be painless.

(*b*) There must be no painful after-reaction or permanent after-effects, on the tissues involved.

(*c*) It must be safe and free from danger to life.

(*a*) *Painlessness.*—The use of general anaesthesia seriously limits the usefulness of endoscopy (1) on account of the dread the average patient has, for the usual inhalation anaesthetics. (2) It is contra-indicated in some of the lung diseases mentioned previously. (3) It is positively dangerous in those cases accompanied by dyspnoea, because the general anaesthetic paralyses those very extraordinary muscles of respiration, through which the patient is keeping himself alive, and its use is nothing short of heading for a disaster. In the field of local anaesthesia cocaine has its own limitations. It is dangerous in children, and even in adults

untoward happenings are far from rare. The introduction of Pantocain (Bayer) has been a great help ; for, it has none of the disadvantages or toxic effects of cocaine and in a one percent solution is as effective as ten per cent solution of cocaine.

(*b*) *and* (c) *Reaction after Endoscopy and dangers.*—Reaction comes in only if there is bruising, tearing, or stretching of the tissues. In the ordinary run of cases for endoscopic examination or drainage stretching or pulling apart of tissues is very slight, within their normal amplitude of resiliency, and of very short duration and if the technic is faultless there is no reaction whatsoever. In other cases the reaction or dangers depend more on the pathological condition which calls for endoscopy than on endoscopy itself. Thorough physical and radiological examination, is however absolutely necessary in every case except in the gravest emergencies, not so much for contra-indications, for, none exist in an emergency, but more to be informed of the actual pathological conditions present and to be "forewarned" about accidents that are likely to occur. Thus ordinarily,

(1) The presence of any thoracic aneurysm or advanced cardiovascular disease contra-indicates endoscopy and œsophageal diverticula should be emptied before endoscopy.

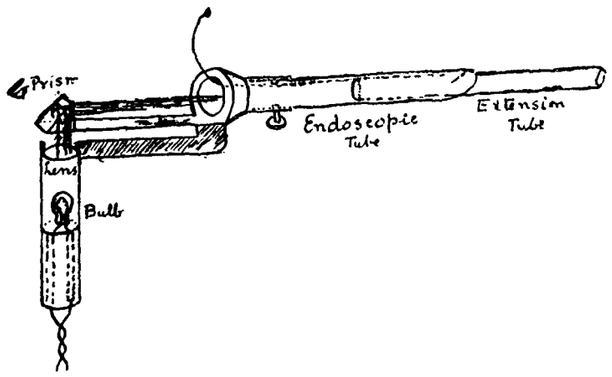
(2) Examination of urine. Diabetics should receive preoperative insulin ; acidosis due to any cause should be treated first. Nephritic subjects are liable to get laryngeal œdema.

(3) With strong positive Wassermann reaction, it is advisable to adopt anti-syphilitic measures in the first instance.

(4) Water hunger which is always present in advanced oesophageal obstruction should always be *relieved first* by rectal, subcutaneous or intravenous saline or gastrostomy.

(5) Cleanliness of the mouth, removal of dentures, and empty condition of stomach before endoscopy should always be attended to.

Peroral endoscopes.—(See Fig. 1). A detailed description of these is beyond the scope of this article. Essentially the endoscopic set consists of a number of straight, hollow, cylindrical polished metallic tubes of various sizes and lengths to suit the different ages, and bevelled at the distal end. The lighting is either directly by a tiny bulb (Jackson's set) situated at the distal end of the tube (distal light) or indirectly as shown in Fig. 1. (Vienna set), where a parallel beam of rays emerging through the lens (L) in the handle, is reflected at right angles into the tube by the hypotenuse of the right-angled prism (P). On the whole, the Vienna set is quite satisfactory, and cheaper in upkeep, the bulbs being ordinary torch-light bulbs easily and cheaply obtainable.



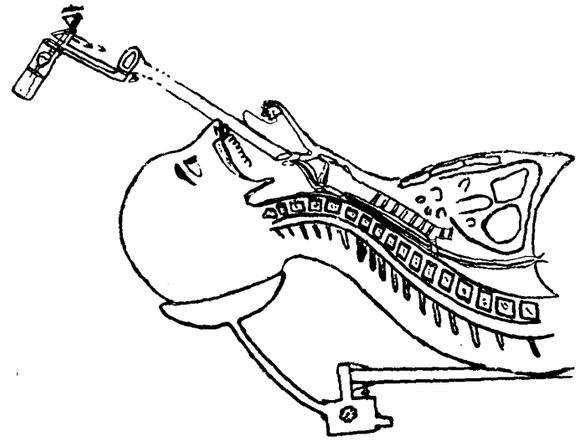


Fig. II.

PERORAL ENDOSCOPY.—View of the epiglottis, which is the first landmark. Note also the raised and extended position of the head.

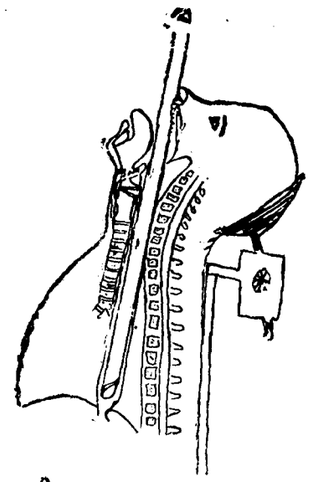


Fig. V.

OESOPHAGOSCOPY.—*Viewing the diaphragmatic hiatus. Note that the head is below table level and to right, and tip of the tube pointing to the left anterior superior iliac spine.*

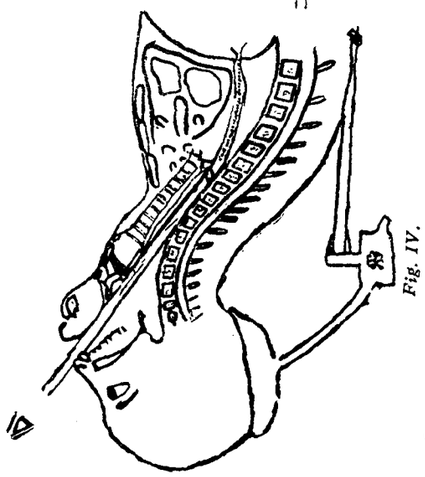


Fig. IV.

OESOPHAGOSCOPY.—*Note that the same position of the head is maintained up to the level of the bronchial crossing. Cricoid lamina is lifted and resting on the tube. Note change of direction after bronchial crossing.*

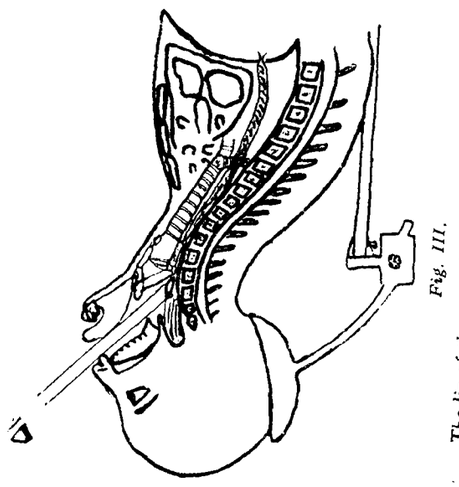


Fig. III.

The lip of the oesophagoscope is in the pyriform fossa. Note the cricoid lamina hugged against the spine by crico-pharyngeus, closing entry into the oesophagus.

Auxiliary apparatus consists of extension tubes, various varieties of bronchial forceps, probes, suction pumps, drainage tubes, dilators etc. The special head rest is very useful. The bronchoscope differs from the oesophagoscope in having sideholes for breathing. Special specula of the spatular or duck-bill type (Hasslinger's), are also available on the same principle giving a larger field for laryngeal or laryngo-pharyngeal work.

Anaesthesia for peroral endoscopy.—Chevalier Jackson, the famous American endoscopist, says that he does all endoscopy under local anæsthesia ; infants and the asphyxiated require no anaesthesia at all. In a large proportion of the cases it can certainly be done under local anaesthesia, the proportion increasing with the skill and patience of the operator. ¼ gr. of Morphia with 1/100 gr. atropine is injected about half an hour before the operation to relax the patient and diminish salivation. A cotton swab lightly wrung out in a solution of Pantocain (1 in 100) with a few drops of adrenalin (1 in 1000), is used to paint the fauces; posterior portions of the dorsum of the tongue, vallecula. epiglottis and posterior and lateral pharyngeal walls, and repeated after a short time if necessary. After the upper pharynx is anaesthetic, two similar swabs mounted on bent laryngeal probes are introduced into each pyriform fossa and held in situ for 3 to 5 minutes. These by acting on the internal branch of the superior laryngeal nerves, anaesthetise the supra-glottic larynx, pyriform fossa and postcricoid region. This is all the anaesthesia necessary for laryngoscopy, pharyngoscopy and oesophagoscopy, (as the oesophagus proper is devoid of acute sensation). For tracheoscopy and bronchoscopy, a few drops of the solution can easily be sprayed into the trachea through the anaesthetic larynx, and the resulting cough helps the even distribution of the anæsthetic. With correct technic endoscopy should be devoid of all pain, and even the discomfort of pressure on the tongue is largely avoided by working from the angle of the mouth.

A working knowledge of the diameters and lengths of the oesophagus, trachea, bronchi etc. at different ages is very essential in the selection of correct tubes and also in pathological conditions where the landmarks may be very much distorted. The minutest details of endoscopic anatomy as well as the ability to judge the distance, contour, and resistance of objects and landmarks, normal and pathological, should be thoroughly mastered by constant practice.

Technic of Peroral Endoscopy.—The patient should lie on his back, with the head raised about 3 inches from the table level

and flexed back at the atlanto-occiput joint, without raising the shoulders or arching his back, and resting on an endoscopic head-rest. With the tongue protruded, the endoscope, inserted from the right angle of the mouth, should glide along the midline on the dorsum of the tongue until the free border of the epiglottis comes into view, while the left thumb and forefinger steady it between the teeth. (See Fig. II). If the uvula or the posterior pharyngeal wall is in view the instrument is pointing too far down and the tip should be lifted. When the free border of the epiglottis is well within the field, the tip of the instrument should slightly dip down as it is glided forward, to pick up the epiglottis, and then with a steady firm movement of lifting up of the tongue, epiglottis and floor of the mouth generally, the arytenoids will come into view in the lower part of the field as two smooth rounded eminences. Further movement depends on whether we intend to expose the larynx, trachea or the oesophagus.

Laryngoscopy, Tracheoscopy and Bronchoscopy.—With the epiglottis and the structures attached to the hyoid bone lifted up and forward, the arytenoids, posterior segment of the larynx, whole length of vocal cords from back to front including the anterior commissure, should successively come into view, if the patient is instructed to relax himself and breathe freely. The head should never be allowed to rotate, and any forced extension of the head only excites reflex spasm, and the lifting pressure should be quite steady and never jerky. The left thumb and forefinger should be trained to protect the tongue from being jammed between the teeth and the tube, and any secretions in the throat promptly mopped out, as the patient with the endoscope in his mouth is inarticulate and unable to swallow. If now the head is gradually lowered to the table level, the rings of the trachea will successively come into view through the glottic aperture, and when the larynx and trachea are in the same axis, the whole length of the trachea can be visualised. Now a bronchoscopic tube can be passed through the glottic aperture to inspect the trachea, and it should be of suitable size to pass through it comfortably without danger of injury to the subglottic tissues and likelihood of stenosis developing later. (Never more than 10 mm. even in adults.) The tracheal rings, respiratory blast and the tubular character of breathing are the chief landmarks which can never be missed. Before entering the bronchi the carina must be identified; it is a sharp vertical spur, slightly to the left of the midline. To get into the right bronchus which deviates but slightly, the lip of the small bronchoscope should be slightly

turned to the right, while the head is moved to the left. The epi-arterial branch of the same can be exposed by displacing the right wall at the level of the carina. Similarly the left bronchus can be exposed by turning the lip of the bronchoscope to the left and displacing the left tracheal wall while the head is moved to the right.

Oesophagoscopy.—Having identified the rt. arytenoid the tip of the tube should be insinuated into the rt. pyriform fossa lying on its outer side. (See Fig. III). Pointing now towards the midline, it should glide easily for about one inch through this fossa, when it will be momentarily arrested by the sphincter-like action of the lowermost, horizontal fibres of the Inferior Constrictor (Crico-pharyngeus). So powerfully does this muscle hug the cricoid lamina against the spine, that as Jackson says, "it is difficult to believe that this muscle is inserted into the median raphe and not into the spine itself". Steady pressure of the weight of the tip of the oesophagoscope is quite enough to relax this muscle. The tip of Hasslinger's oesophagoscope is so admirably shaped, that no other manoeuvre is necessary, and it glides through the short cervical oesophagus, into the thoracic portion which is easily identified by its numerous longitudinal folds, and opening and closing with respiration. The lumen must always be kept in axial view, but the general direction—in the middle line and parallel to the spine, is maintained up to the level of crossing of the left bronchus, which is the last structure keeping it down. (See Fig. IV.) It may be necessary to introduce the extension tube at this level. After the bronchus level is crossed, the lumen shows a tendency to disappear anteriorly (upwards) and to the left to the diaphragmatic hiatus, and so the head will have to be slowly lowered to below the table level, so that the axis may correspond to that of the lower third of the oesophagus (See Fig. V.) As the tube is advanced, the diaphragmatic hiatus appears like a puckered purse string slit, and opens more easily with slight pressure, leading to the short, but broader abdominal oesophagus, which, without any internal landmarks, leads to the stomach, which in turn, can be identified by the gush of gastric juice and rolling of the red rugae.

Principles involved.—For oesophagoscopy, the mouth, hypopharynx and oesophagus have to be brought into a straight line for direct vision. For this purpose the Oro-pharyngeal angle is first obliterated by extending the head at the atlanto-occipital joint, and lifting up the floor of the mouth. By starting from the right angle of the mouth, unpleasant pressure and injury to the

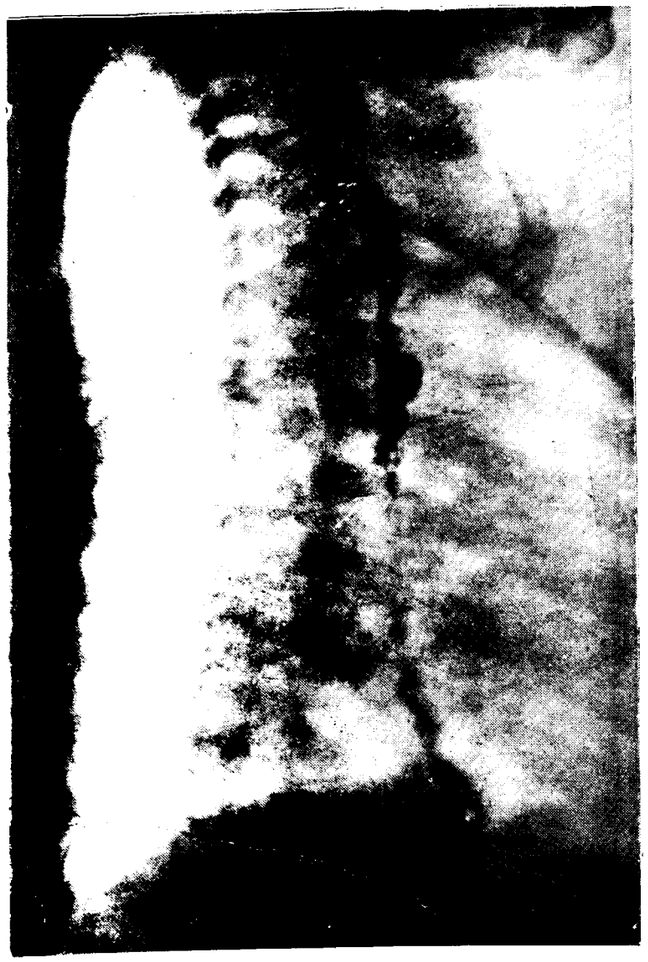
tongue is avoided, passage through the right pyriform fossa is rendered easier and the ultimate goal of aiming to the left of the midline is kept in view. Passing directly behind the arytenoids in the midline requires more force and hence more risk of injury. The crico-pharyngeal sphincter is the most difficult to negotiate, for the lumen becomes eccentric, and we are passing from a wide funnel-like passage to a narrow tubular passage (as opposed to the diaphragmatic sphincter) and the entrance hidden by the larynx. It is to negotiate this, that the head is raised so that the cervical and upper dorsal spine may be in a line, and with this the oespohagus also, as it is parallel to the spine. The tonic contraction of the cricopharyngeus is overcome by the lip of the oesophagoscope. It is here that the smooth convex-bevelled tip of Hasslinger's tube works most admirably by insinuating itself like wedge first, and then automatically acting like a lever, as it glides down the spine, from the pyriform fossa and imitating the natural passage of food. The raised extended position of the head, is practically sufficient up to the bronchial level, and it is only after that, change in head-position is necessary. There should be no dyspnoea as the air-passages are resting on the cricoid which is the only complete cartilaginous ring in it. Position in Fig. V. cannot be maintained from the beginning, because then it would not be possible to open the crico-pharyngeus by a safe wedgelike action, in very much the same way as opening the anal sphincter by the pulp of the index finger instead of a direct thrust.

The following are interesting case reports of patients operated upon by me by peroral endoscopy, in my Institute and they could not have been tackled safely and successfully by any of the old methods of probangs or blind bougies.

1. STRICTURE OF THE ŒSOPHAGUS IN A CHILD AGED 5 YEARS:

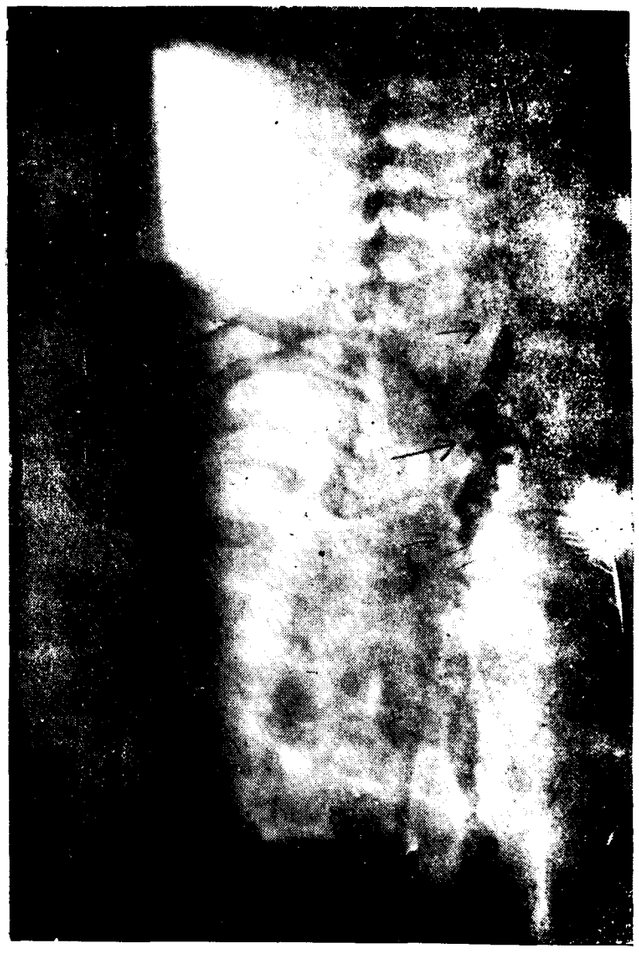
Baby S—,aged 5 years, Manambachavady, Tanjore District. 18—5—1936. *History*—About three months back the child swallowed a dose of corrosive lubricant, accidentally, mistaking it for ghee. This was followed by severe inflammation and ulceration of the mouth and throat with dysphagia. Eventually under treatment, though the ulcers in the mouth healed, the dysphagia began to increase to a degree when the child could not even swallow water without much difficulty.

Present condition.—The child is visibly emaciated, weighing only 20 lbs. Soft palate and epiglottis visibly scarred, portions of hypo-pharynx still showed some signs of inflammation and both pyriform were covered with frothy mucus. There was considerable difficulty in swallowing water, the child taking 3 to 4



Skiagram I.

STRICTURE OESOPHAGUS (Chemical.) Baby Subramaniam.
Radiograph of Oesophagus with Barium filling after first dilation (partial) on 21-5-36.



Skiagram II.

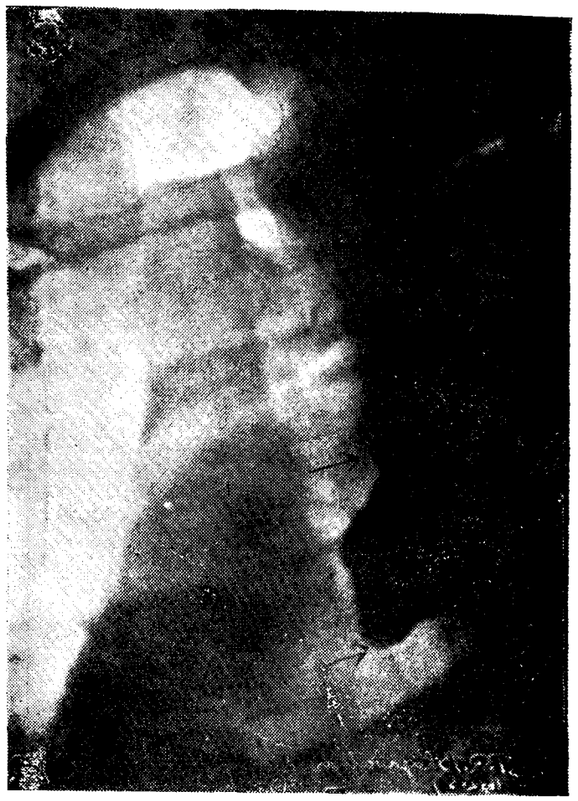
STRICTURE OESOPHAGUS (Chemical). Baby Subramaniam

Radiograph of Oesophagus with Barium filling after second dilation on 17-6-36.

Skiagram III.

LEFT ANTERIOR OBLIQUE VIEW

T. R. B. Tooth plate in the Oesophagus.
Radiograph after Barium filling.



Skiagram IV.
RIGHT ANTERIOR OBLIQUE VIEW
T. R. B. Tooth plate in the Oesophages
Radiograph—Plain.

minutes to swallow a mouthful, and frequently regurgitating frothy mucus. X-ray picture with Barium showed marked stricture in the oesophagus opposite the first thoracic vertebra with irregular clearance up to about the level of 3 D. V. presumably due to ulceration and irregular peristalsis. Rectal, glucose saline was administered for three days, with as much fruit juice as the child could swallow and Bism. carb. powders to be swallowed dry.

21–5–36. Oesophagoscopy was done under general anaesthesia (C_2E_3) with 1/200th gr. of atropine ½ hour before operation. A 7 mm. oesophagoscope was used. The post cricoid pharynx, and cervical œsophagus, were still raw showing velvety congestion at some places and granulating ulcers in other parts. At the junction of the cervical with thoracic oesophagus, the white scar of the stricture could be clearly seen running round nearly ¾ of its circumference. The field was mopped dry and the stricture dilated to about 3mm with a silk-woven œsophageal bougie.

The post-operative period, was quite uneventful and the child was easily able to swallow fluids and well boiled conjees. X-ray picture taken on 26–5–36 is annexed. After-treatment consisted in injections of Collosal Iodine, Codliver oil orally and bismuth powders for the œsophagitis. On 13–6–36 the child weighed 24 lbs. On 17–6–36 Oesophagoscopy was again done under general anaesthesia and the stricture dilated to about 7mm. Inflammation had cleared up and the child was able to eat solids without any difficulty by about 21–6–36, and the X-ray picture of that date which is annexed, shows nearly normal lumen, though the clearance is sluggish. The parents have been warned that the stricture might re-form requiring another dilation, but up to 10–3–37, the child had no further difficulty according to the report of the family doctor.

2. FOREIGN BODY (TOOTH-PLATE IN THE OESOPHAGUS). Removal by Oesophagoscopy under *local* anaesthesia.

T. R. B. aged 44, "Modern Cafe", Madras.

History.—On 6-2-'37, he swallowed during sleep his artificial tooth-plate carrying the upper two central incisors. From that date he had been attempting to vomit it out by violently tickling his throat, but was unsuccessful. Gradually increasing dysphagia set in with severe retro-sternal pain. From 14-2-'37 even swallowing water was difficult with severe cough and pain whenever he attempted to swallow; complained of severe thirst.

16-2-'37. When he saw me nearly 10 days after the accident, he was visibly emaciated and slightly dyspnoeic with a dry tongue.

Left side of epiglottis and left ary epiglottic fold were oedematous and congested due to trauma by attempts to vomit. Tracheal mucous membrane slightly injected in the lower portion.

X-ray Report.—The X-ray pictures showed a tooth plate in the oesophagus, just above the level of the bronchial crossing. Two injections of intravenous glucose saline were given on 16th and 17th.

17-2-37. Oesophagoscopy was done under local anæsthesia with the technic previously described. A full sized tube was passed down and the tooth plate was located at a distance of about 10½ inches from the incisors. Foul-smelling blackish fluid and debris was obscuring the field. All this was mopped up and with the tooth plate firmly grasped with the forceps, the tube mouth was pressed close and the whole set withdrawn.

After treatment.—Sterile liquid food for about a week after operation and cleanliness of the mouth. The cough, while swallowing, disappeared after subsidence of the oedema of the epiglottis, and he was able to take normal food by the 26th and fit to rejoin duty by 1-3-37.

3. CORK FRAGMENT IN THE TRACHEA. Removal under *local* anaesthesia by Tracheoscopy.

Mrs. S. aged about 40 years. Servant.

History. On 3-4-37 while attempting to pull out the cork from a hydrogen peroxide bottle with the teeth, there was an explosion and a small bit of cork flew in and she had severe fits of coughing. She saw me within an hour of the accident, and breathing was very shallow and laboured. Any attempt at deeper breathing was followed by severe coughing. On the same day tracheoscopy was done under local anaesthesia and the cork was found in the Trachea at the level of the carina, near the mouth of the right bronchus floating so-to-say, on some viscid accumulated mucus. The tracheal mucous membrane was visibly injected. With a bronchial forceps the cork piece was gently grasped and removed into the bronchoscope and withdrawn, through the mouth. The cork was an irregularly rectangular chip measuring about 8 mm. by 4 mm. No special after-treatment was adopted and the patient did not feel any trouble.

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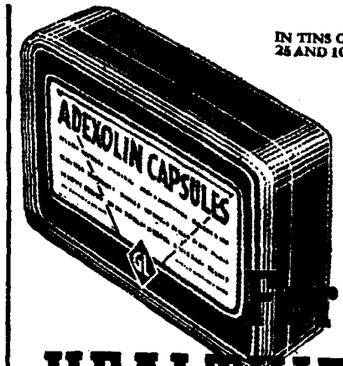

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Cerebral-Vascular Lesions*

BY

S. Shankararaman, M.B., B.S.,

Surgeon & Dentist, Cuddalore, Old Town.

CEREBRAL-VASCULAR lesions are important to the general practitioner because of their sudden onset, difficulty in diagnosis and their variable prognosis.

These lesions to the brain are either traumatic or non-traumatic.

Traumatic.—Concussion, Haemorrhage, and Contusion.

Non-Traumatic.—Leaking Cerebral Aneurysm, Thrombosis, Haemorrhage, Embolism, Oedema of the brain, and Angio-spasm in Hyperpyesis.

The brain is supplied by four arteries, two on each side—the Internal Carotid arteries and the Vertebral arteries. The Internal Carotid artery enters the cranial cavity lateral to the posterior clinoid process and gives off the Ophthalmic artery. This artery lies in the angle between the Optic nerve and the Optic tract and turns laterally below the anterior perforated substance, and divides into the anterior, and middle cerebral arteries. The middle cerebral artery is the larger of the two terminal branches and runs laterally into the stem of the lateral fissure, and then turns upwards in the lateral fossa, where, on the surface of the Insula, it breaks up into a number of large terminal branches. The anterior cerebral artery runs horizontally above the optic chiasma and turns sharply upwards in the anterior part of the longitudinal fissure, anterior to the lamina terminalis to the Genu of the Corpus Collosum, round which it bends and runs towards the parieto-occipital fissure. It communicates with the anterior cerebral artery of the opposite side by the anterior communicating artery. These two branches of the internal carotid artery supply roughly the anterior two-thirds of the cerebral hemisphere.

The vertebral arteries enter the cranial cavity through the Foramen Magnum and unite at the lower border of the Pons to form the Basilar artery, after giving off the posterior Inferior Cerebeller arteries, which supply the greater part of the cerebellum and the Medulla.

The Basilar artery runs from the lower border of the Pons to its upper border where it divides into the two posterior cerebral

* Specially contributed to the "Antiseptic".

arteries. The posterior cerebral artery supplies part of the mesial aspect of the hemisphere, the inferior surface, the Uncinate region, and the posterior part of the corpus callosum, and the corresponding edge of the convexity. The anterior cerebral artery supplies the Pre-frontal lobes, the Orbital lobes, the anterior part of the Caudate nucleus, and the whole of the mesial aspect of the hemisphere, as also the Corpus collosum as far as the parieto-occipital fissure.

The middle cerebral artery supplies the whole of the convexity of the hemisphere, as also the occipital pole. This supply explains the escape of central vision in destruction of the Cuneus from lesions of the posterior cerebral artery. The anterior, middle and posterior cerebral arteries form the Circle of Willis, in the sub-arachnoid space at the base of the brain.

Concussion is a patho-physiological phenomenon, characterised by immediate complete suspension of the functions of the brain, in the absence of demonstrable patho-anatomical changes in the central nervous system, as a result of injury to the head. It may or may not be associated with haemorrhage.

In severe cases, there is engorgement of the Lungs, Viscera and the right side of the Heart and there is punctiform ecchymosis over the Brain surface.

It is characterised by unconsciousness, the muscles are relaxed and flaccid, the pupils are equal and often contracted, but react to light; cold clammy sweats, slow, shallow, sighing respiration; rapid, weak and fluttering pulse; low B. P. and subnormal temperature. This condition may last for a considerable time or a few minutes or even seconds. Many cases usually rally, but death may sometimes occur—the patient remaining unconscious throughout. In recoverable cases, reaction sets in sooner or later, pulse and respiration improve. Among late results are: headache, irritability, neurasthenia, and loss of some special function of the the brain permanently as loss of memory, loss of vision, loss of hearing.

Many theories have been advanced to explain this condition:

(1) Duret's theory of Restiform-body stimulation.

(2) Cushing's theory of Cerebral Anaemia.

(3) Variations in the specific gravity of the Grey and White matter.

(4) Changes in the Lipoid, Protein, Electrolyte equilibrium.

(5) Alteration in the H-ion concentration.

(6) Synaptic interruption.

(7) Molecular disturbance within the cells.

Treatment.—Put the patient to bed with the head low, cover him with blankets, injection of adrenalin and strychnine, Lumbar puncture in most obstinate cases. Room is kept dark and patient must have absolute rest.

Contusion may be due either to the direct transmission of force through the skull to the brain or to displacement of the brain against the opposite side by Contracoup. The area of contusion is wedge shaped with the base on the surface of the brain. There is haemorrhage in the involved area. There may be associated sub-arachnoid haemorrhage.

Signs: There is evidence of local brain injury immediately after an accident. Increased intra-cranial pressure occurs later on. Diagnosis from extra-dural or sub-dural haemorrhage is made from the signs of local brain injury being present from the beginning in contusion, while they appear in haemorrhage after a latent period. Contusion of the silent areas of the brain often pass unnoticed.

Haemorrhage rarely occurs uncomplicated. Generally concussion and in some cases contusion and laceration also complicate the picture.

Haemorrhage:—Extra-dural.
Intra-dural } Sub-dural. Sub-arachnoid. Intra-cerebral. Ventricular.

Extra-dural haemorrhage is usually of middle meningeal origin. The middle meningeal artery enters the cranium at the foreamen spinosum and divides into an anterior and a posterior branch. The anterior branch is most frequently torn as it crosses the antero-inferior angle of the parietal bone. The characteristic symptom is the interval of consciousness following the accident. There is a brief period of unconsciousness immediately after the trauma due to concussion of the brain. Then consciousness is recovered. After a period varying from a few hours to several days there is secondary loss of consciousness associated with localised pressure symptoms as paresis, visual field defect, unequal pupils or Jacksonian convulsions.

In uncomplicated cases the diagnosis should be easily made and operative treatment done.

In cases complicated with Intra-dural haemorrhage it is

impossible to definitely diagnose. Lumbar puncture reveals a clear fluid under pressure only in uncomplicated extra-dural haemorrhage.

Treatment.—Trephine the skull 1½" behind the external angular process of the frontal bone and 1½" above the Zygoma. Catch hold of the anterior division and ligature. The posterior branch is best secured by trephining the skull 1¾" behind external angular process and 1/4th" above zygoma.

Intra-dural Haemorrhage.—Acute sub-dural haemorrhage results from laceration of a cortical vessel with bleeding into the sub-dural space. If the Pia-Arachnoid is not injured the haemorrhage will be limited to the sub-dural space and the spinal fluid is clear. The dura is displaced by the clot and symptoms of compression supervene.

Lacerations of the Arachnoid give rise to a collection of C. S. F. in the sub-dural space.

Signs of general and local cerebral pressure appear early when the bleeding is great; but when slow bleeding occurs a latent interval may be present. The spontaneous arrest of haemorrhage leads to the formation of a chronic sub-dural haematoma. In these cases the latent period may be many months. The acute type of haemorrhage is diagnosed by the signs of increased intra-cranial pressure as also the advancing localising signs. The pupil on the side of the haemorrhage, is dilated. There will be Sargent and Holmes Syndrome of spastic paralysis of both lower extremities with hyperactive knee and ankle jerks and a positive Babinski in cases of haemorrhage from superior sagital sinus.

It is in those cases, where a membrane develops round the extravasated blood in the sub-dural space which becomes vascularised and leaks from the capillaries comprising it resulting in increase of the size of the haematomata, which produces compression of the brain after a latent period of many months or even a year, that difficulties in diagnosis result. In such cases patients must be carefully examined when they complain of recurrent headache. The eyes must be examined for any sign of papilledema and the pressure of the C. S. F. must be measured.

Sub-Arachnoid Haemorrhage.—May be either spontaneous or traumatic. Traumatic sub-arachnoid haemorrhage is accompanied often by contusion and laceration, though it may occur alone. The blood mixes with the C. S. F. When the sub-arachnoid space in the posterior fossa becomes distended with blood, irritative symptoms such as stiffness of the neck, rapid respirations

and rise of temperature are marked. Spontaneous sub-arachnoid haemorrhage has come to be regarded no longer as a rarity but of fairly common occurrence with a definite clinical picture. The main cause is a leaking cerebral aneurysm of one of the arteries of the Circle of Willis brought about either by a congenital defect in the arterial wall (Berry Aneurysm) or an arteriosclerosis of the cerebral arteries or by the presence in them of an infective embolus or by trauma producing an arterio-venous aneurysm. Syphilis is rarely a causative factor. Leukaemias, Purpura and sometimes Septicaemia are the causes of those sub-arachnoid haemorrhages. The symptoms in cases of spontaneous sub-arachnoid haemorrhage are due (1) to irritation of the meninges by the altered blood, (2) increased intra-cranial or intra-thecal pressure, (3) to local pressure of a clot on the adjacent structures, (4) to damage to the brain and (5) symptoms due to the primary disease which caused it.

Prognosis.—Cases in which the patient after complaining of "throbbing" headache, accompanied by vomiting and vertigo, becomes at once comatose with dilated pupils, slow pulse, stertorous respiration, a raised temperature and bloody C. S. F. on lumbar puncture, are almost always fatal.

Cases in which there is no coma but transient unconsciousness followed by a drowsy state in which he complains of "bursting" headache recover often. Absolute rest, Morphia if necessary, repeated lumbar punctures are necessary. There are two schools of thought regarding lumbar puncture in these cases. One school believes it is wise not to do any, because patients are seen to recover completely and remain without a recurrence for long periods with rest alone, the blood getting absorbed; but experimental evidence suggests that blood in the sub-arachnoid space may later give rise to thickening of the arachnoid and fibrosis of the dura and consequent impairment of the absorption of the C. S. F. It is therefore rationale to drain the blood from the sub-arachnoid space by repeated lumbar punctures. There is no evidence to prove that withdrawal of the cerebro-spinal fluid will lead to further haemorrhage if done after 24 hours. It may be mentioned in passing that haemorrhage from a leaking aneurysm is sometimes strictly localised and there will be no blood-stained C. S. F.

I was called on to see a case on the 5th day of attack about six years back. The attending Doctors were divided in their opinion about the cause being either a cerebral tumour or an apoplexy. The patient complained of splitting headache and

became unconscious, which developed into coma. There was no hemiplegia or convulsions. Rigidity of the neck along with Kernig's sign was present. The B. P. was slightly raised. I had no hesitation in diagnosing it as a case of leaking cerebral aneurysm and advised lumbar puncture. By the time the patient's relatives consented, the pulse began to fail, coma deepened and lumbar puncture, as expected, did not allow the flow of C. S. F. The patient died a few hours after. The association of headache and rigidity of the neck with no lesion referrable to the special functions of the brain is a definite clinical picture in that case. Examination of the blood was negative for parasites.

Intra-Ventricular Haemorrhage results from (1) rupture of a deep intra-cerebral haemorrhage into the ventricle ; (2) traumatic rupture of one of the vessels in the ventricular wall or the Choroid plexus. The blood immediately diffuses through the ventricular fluid, passes through the aqueduct of Sylvius and fourth ventricle into the sub-arachnoid space of the posterior fossa. Irritative symptoms follow. If the haemorrhage occludes the aqueduct of Sylvius or the foramen of Luschka and Majendi, hydrocephalus results. It is usually fatal.

Prognosis in Brain Lesions.—The presence of unconsciousness is of grave prognosis. The mortality is 7 % in the conscious and 66 % in the unconscious. Time is a factor ; fatal within 24 hours and prognosis improves with the time. Shock is of bad prognosis. Cerebral compression : rapid onset is grave, hyperpyrexia is fatal. Cheyne-Stoke type of respiration is fatal.

Treatment of Brain Injuries in General.—Since a definite line of treatment is essential in all traumatic cerebral lesions, the following consideration will be found very useful as a routine :

(1) Relief of intra-cranial pressure.
(2) Relief of local brain pressure and
(3) Symptomatic treatment.

Relief of Increased Intra-cranial pressure :—Intravenous injection of 50 % glucose combats shock and relieves cerebral compression by withdrawing the fluid from all tissues into the circulating system. Hypertonic saline also can be used both intravenously as well as per rectum. Lumbar puncture is useful but repeated lumbar punctures must not be lightly undertaken within the first 24 hours, since rapid removal of the C. S. F. might accelerate a haemorrhage. Usually repeated lumbar punctures suffice for the recovery of a patient suffering from cerebral compression, but when unconsciousness is prolonged for days it is better to perform a sub-temporal decompression. But care must be taken to see that no trauma results to the temporal lobe, since such an injury increases the œdema and precipitates the fatal issue.

Relief of local Brain Pressure:—Relief of local cerebral pressure can be done by operative interference. Extra-dural and acute sub-dural haematoma are reached after sub-temporal decompression : the haematoma is cleared completely and the bleeding points firmly secured. Intra-cerebral haemorrhage must be incised over the cortex and bleeding arrested with silver clips.

General and Symptomatic Treatment.—Complete rest in bed for at least two weeks is essential. Active work must be prohibited for at least two months. Physical and mental rest even at the sacrifice of an economic necessity must be ordered. Hyperthermia is best treated by alcohol sponges whose evaporation may be aided by fanning. After twenty-four hours have elapsed lumbar puncture must be done.

Restlessness.—is combated by Luminal 3 grs. internally or Luminal-Sodium 2 grs. subcutaneously but lumbar puncture is the remedy of choice.

Headache and dizziness.—Pyramidon and Aspirin are useful only to some extent. Lumbar puncture again is very useful to relieve these symptoms.

Acute Mania.—Paraldehyde half-an-ounce with Olive oil 2 ozs. thoroughly shaken and given per rectum is useful.

Hypertensive Cerebral attack : of Douglas McAlpine.—Patients with high B. P. are liable to exacerbations of this pressure with which are associated cerebral symptoms. McAlpine differentiates two types of attacks : (1) with signs of cerebral œdema, (2) where œdema is absent.

With signs of oedema:—Patient is usually under 40, symptoms are : (1) severe headache, (2) vomiting, (3) drowsiness developing into coma later, (4) mild Jacksonian type of epilepsy, and (5) hypertensive retinitis.

Without signs of cerebral oedema: Patient is usually above 40; symptoms are : (1) headache (2) temporary attacks of aphasia, (3) transient paralysis, (4) coma and (5) convulsions. Among minor angiospastic symptoms are numbness and tingling in the hand and around the mouth : vision may be affected independently of retinitis.

After a period of several hours all these signs disappear completely. This phenomenon is due to temporary spasm of the cerebral arteries which subsequently relax to restore normal blood

flow. Forbes and Wolff have definitely established that stimulation of the cervical-sympathetic in the neck of a cat by a faradic current is followed by constriction of the pial arteries. They have also established that dilatation of the pial arteries occur by changes in the chemical composition of the blood as decrease in the CO_2 content, or an increase in the oxygen content. These experiments prove that there is a nervous control of the superficial blood vessels of the brain as also the blood vessels entering the brain. The blood supply of the brain is thus dependent on the state of the tonus in the cerebral arteries and arterioles, which in turn, are dependent on the sympathetic and the autonomic nervous system. These facts explain the cerebral symptoms of hypertension.

Prognosis.—Generally recovery from the first cerebral attack is the rule but other attacks follow and cerebral haemorrhage or cardiac failure end the picture.

Treatment.—Aim at speedy reduction of the blood pressure. Venesection, intravenous hypertonic salines, lumbar puncture in cases of cerebral œdema and venesection alone in non-oedematous cases along with inhalations of Amyl-Nitrate and administration orally of half-a-grain of Erythrol Tetranitrate must be done. Enema and Calomel 5 grains internally must be administered.

Cerebral Embolism.—Embolism of the cerebral arteries usually come from a diseased heart valve but a clot from the left auricle in mitral stenosis or the detached clots from the region of the pulmonary veins or from an atheroma of the aorta may also cause it. Owing to the frequency of mitral disease and puerperal cases in women, women are more affected by embolism than men. The left middle cerebral artery is more affected than the right. In some cases secondary thrombosis occurs from the embolus throughout the whole distal distribution of the vessel and leads to complete softening of the areas of supply. The softened area may undergo cyst formation or may be completely absorbed. In other cases no secondary thrombosis takes place and retraction of the vessel wall results in reopening the blood vessel and symptoms of embolism dramatically disappear. In others still, the embolus contracts and becomes detached and shifted to another smaller calibre of the artery. This phenomenon is evidenced clinically by the rapid clearing up of physical signs of many regions with persistence in one particular region. In some others the embolus blocks the termination of the internal carotid artery giving rise to carotid hemiplegia *i.e.*, hemiplegia with blindness of the opposite eye from blocking of the ophthalmic artery. Owing to the re-establishment of the circulation by the circle of Willis, the haemiplegia recovers rapidly but the blindness persists due to secondary thrombosis of the ophthalmic artery occurring.

Cerebral thrombosis and Haemorrhage. — Though quite separate, conditions requiring separate lines of treatment are from the clinical stand-point impossible of distinction. On account of the identity of the underlying pathological condition in every case and the clinical association of thrombosis and haemorrhage of the cerebral arteries, the two conditions must be taken together for consideration.

Aetiology.—(1) Syphilis is the most common cause of thrombosis in the first half of life. (2) Atheroma is the cause both of thrombosis and haemorrhage in the second half of life. (3) Renal disease. (4) Abnormal conditions of the blood as in puerperal state and low blood pressure. (5) New growths cause thrombosis more than haemorrhage. (6) Traumatic lesions. (7) Inflammatory conditions as encephalitis and polyomyelitis. Cerebral haemorrhage results from either direct rupture of a true aneurysm or from the wall of an artery softened by disease. Cerebral haemorrhage is often the end-result of a thrombosis. Thrombosis occurs when the blood pressure is low and the circulation is less active. It occurs during sleep or following exhaustion. Thrombosis may have an ingravescent onset when it occurs in the distal branches and extend backwards towards the main vessel, but it may also have a sudden onset when the main blood vessel itself is thrombosed. There is associated œdema which causes loss of consciousness and which disappears in a few days with the rest. The affected area of the brain is bright red in colour and then shrinks leading to red softening. Later the blood pigments degenerate and lead to yellow softening. Finally the thrombotic tissue is mostly absorbed leaving a small cavity which may be mistaken for a haemorrhagic cystic cavity. The C. S. F. is not tinged with blood. Convulsions may occur.

Haemorrhage on the other hand is sudden in its onset and is commonly due to rupture of lenticulate straite artery. The C. S. F. contains blood and blood pressure is high. It occurs in the day and with effort. Convulsions are unusual.

Though these factors are usually described, it is not possible often to diagnose these conditions definitely but for all practical purposes it may be true to say that patients who survive have suffered from thrombosis and patients die in haemorrhagic apoplexy.

Symptoms.—These depend on the site of affection. When the region of the middle cerebral artery is involved there is haemiplegia, which is associated with aphasia if the left side of the hemisphere is affected. When the calcarine artery is affected hemi-anophia results which is associated with the word blindness if the lesion is on the left side. Pontine apoplexy produces double hemiplegia, bilateral ataxy and signs of involvement of the cranial nerves.

Prognosis.—Immediate survival is good if (1) patient is not deeply comatose; (2) recovers consciousness in 24 hours; (3) there is syphilitic thrombosis; (4) the cardiac and lung conditions are good: (5) there is no renal disease or high blood pressure; and (6) there is no haemorrhagic apoplexy. Ultimate recovery of function is good only in syphilitic cases.

Treatment.—Disease of the arterial wall except that due to syphilis, is not amenable to treatment. It is often impossible in the first few days following an attack of apoplexy to determine how much impairment is due to tissue destruction and how much to secondary œdema and increased intra-cranial pressure. Hence absolute rest in bed is essential. Patient's head and shoulders must be raised and if stertor is present they must be turned to one side so that the tongue does not fall back and impede respiration.

Venesection must be done when there is cyanosis. Ten to twenty ounces of blood must be removed from the ante-cubital vein. Lumbar puncture must be done to relieve the intra-cranial pressure. Purgatives should be avoided. Feeds must be liquid foods. Diffusible stimulants must be administered. In a comatose patient nasal feeding must be resorted to. Bladder must be drained and patient kept clean. Restlessness is relieved by administration of paraldehyde drachms 2 in Olive oil ounce 2 per rectum. In syphilitics anti-syphilitic treatment must be started at once.

In cases of haemorrhage Calcium chloride and Haemoplastic Serum can be tried and no attempt must be made to suddenly bring down the blood-pressure. As mentioned earlier, haemorrhagic cases are always fatal.

The successful treatment of hemiplegia that results, requires intelligent anticipation of the Doctor and the active co-operation of the patient. Even when coma is present the paralysed arm and leg must not be allowed to lie in the same position for a long time. The upper arm should be kept away from the chest wall by means of a pillow in the axilla, the forearm must be supinated and extended. Passive movements must be started daily at every joint and muscles massaged.

When consciousness returns, patient must be trained to use his limbs by constant attempts at movement. Electricity must be avoided since it increases spasticity.

Cerebro-vascular lesions which are daily occurrences among the practitioners call for all their skill and experiences in their diagnosis and successful conclusion.

Some Observations on Typhoid Fever*

BY

V. P. Venkateswara Iyer, M.B., B.S.,

Tripunithura.

Its Importance in the Tropics.—Though Typhoid fever is a cosmopolitan disease, its high incidence in the tropics, great mortality and the confusion, it may occasionally give rise to, in its differential diagnosis from other fevers peculiar to Tropics, claim for it a special consideration by students of medicine in the Tropics. Thus in the year 1109 M. E. corresponding to the period August 1933—August 1934 the number of typhoid fever cases treated in the Cochin State Hospitals alone came to 1190 with 186 deaths or a mortality rate of 15.5% and in the succeeding year the number treated came to 874 with 129 deaths or a mortality rate of 14.5 %. One can assume the incidence of a large number of cases who are treated in their homes with a similarly high mortality rate.

Epidemiology.—As a generalised outbreak the disease usually occurs every year just after the onset of the S. W. monsoon *i. e.*, during the months of June, July, and August. The in-patient department of a hospital in the State may be seen almost entirely filled up with typhoid cases alone. It seems very probable that the following factors play the chief part in the widespread occurrence of the disease in the season.

(1) Contamination of well water with the infecting micro-organisms. The surface and subsoil flow of water produced by the heavy rains disseminate the bacilli far and wide.

2) The use of unboiled water for drinking.

* Specially contributed to the "Antiseptic".

(3) Soil contamination by the excreta of human beings who either suffer from the disease or are carriers. It would appear that the condition of the soil in the season affords a congenial environment for the survival and growth of the bacilli. Though no proof seems to exist, the idea will serve to partly explain the prolonged stay and intensity of an epidemic in a locality. It is known that collections of water polluted with the bacilli are not favourable for their survival or growth for more than a few weeks, (4 or 5).

Flies, fomites, and direct infection play a secondary part in the spread of the disease.

Endemiology.—As small outbreaks of sporadic cases, the disease occurs throughout the year in towns. This is explained by the transmission of the disease by carriers. This is only reasonable since the ultimate source of infection must always be the discharges of patients harbouring the bacilli. The detection and proper treatmont of carriers is a very important problem in stamping out the disease in endemic areas. Carriers are either temporary or permanent. The temporary carriers are those who are convalescent from the disease. It is recommended that at least three successive negative examinations be had of the faeces and urine of convalescent persons at weekly or fortnightly intervals before they are decided as probably free from infection. The permanent carrier excretes the organism in the faeces or urine intermittently or permanently and presents a tough problem for being dealt with. When it appears difficult to trace the source of infection in a case, the examination of contacts may sometimes show that they are carriers of the permanent type and the source of infection.

Disposal of the carrier menace.—The detection of carriers in a locality is a difficult practical problem. The treatment is even more difficult. An individual who is known to be a permanent carrier should not be employed in the handling of food and milk. Where the disease is endemic the provision by the State for the compulsory but free bacteriological examination of the faeces and urine of those who are employed in hotels or are concerned in the selling of articles for consumption such as fruit would go to lessen the menace of the infection from the carriers. The education of the people in the adoption of clean habits would also contribute to minimise the chances of infection from undetectable carriers. These are the washing of hands with clean water

before taking food, washing of raw articles before they are consumed, the avoidance of taking any food from the hands of those who are known to be dirty and careless in their habits, and especially proper ablution after answering the calls of nature. This consists of washing the anus first and afterwards the hands with plenty of clean water after the act of defaecation. This will prevent the carrying of infection by the hands and the clothing of individuals who are probably carriers.

Variation in Type.—The duration of the disease, the severity of the toxaemia, and the frequency of complications show wide variations. During an epidemic, a majority may appear exposed to the chances of infection but only a few develop the disease. When a case occurs in a house, many of the inmates and attendants upon the case escape the disease despite their greatly apparent exposure to infection. The factors underlying these observations are the virulence of the infecting organism, the dose, and the resistance of the individual. Though it is a very satisfying explanation no doubt, it has the garb of a fatalistic philosophy about it and it does not provide us with any useful suggestion in designing practical preventive or curative measure in dealing with the incidence of the disease.

Symptoms and complications.—Typhoid is the most common of continued fevers. The duration of the fever may be as short as 10 days or as long as 5 or 6 weeks. The average duration is about 3 weeks. These things can be observed during an epidemic.

In a typical and uncomplicated case the onset is insidious and the patient complains of malaise, evening headache, insomnia and an irritable cough. The temperature, rising gradually in the evenings, reaches a height of about 103° F. by the end of the first week. Prostration, anorexia, a dull apathetic facies, a tongue with clean edges and white fur at the centre, a relatively slow pulse, slight abdominal distension and a sustained high temperature characterise the picture of the patient in the second week. The temperature falls progressively in the evenings and improvement sets in during the third week.

The temperature may have a sudden onset in some cases. In others it may be remittent in type throughout. Rose spots are rarely seen. The enlarged spleen has to be carefully looked for. Sometimes it appears only late in the disease and sometimes it may be difficult to feel it throughout the disease. Epistaxis may occur as an early symptom. Severe strangury with bloody urine may be a prominent though a rare symptom at the onset. Deafness is

fairly common during the second week. Diarrhoea may be another feature. Delirium of a mild muttering type occurs at the height of the disease. Sometimes it may be wild. Teeth-grinding may be a marked symptom at night.

Some common important complications are: diarrhoea tympanites, intestinal haemorrhage, perforation, delirium and severe toxaemia. A few among the occasional complications are aphasia and general haemorrhage. A case was admitted into the Hospital because two other cases had succumbed to haemorrhage under home treatment. The patient who was a youth appeared to be getting on well, but one morning, haemorrhage developed dramatically from the bowels, urethra, mouth and nose and the patient sank in a few hours.

Blood picture.—There is leukopaenia with relative preponderance of the lymphocytes. The eosinophils may be found absent sometimes.

Relapses.—The most puzzling feature about the disease is the occurrence of relapses in some cases. Though relapses are stated to be milder than the original attack and of no grave significance the writer has seen many cases where they were severer than the original attack and ended fatally. Relapses usually occur after the temperature has remained normal for about a week or so. In a recent case it began a little over 3 weeks after the termination of the original attack, just on the day on which it was decided that the patient could have a bath. In some cases the temperature during the third week gradually appears to come down to reach the normal along with improvement in the clinical condition of the patient when it again rises step-like followed by a period of sustained high fever.

Relapses cannot be foreseen. They occur without any apparent cause. The mechanism of relapse is generally thought as either due to a fresh infection of a different strain of organism or to the disappearance of immunity. In the latter case it is not clear why the immunity disappears so quickly in some cases while not doing so in others. The immunity acquired in typhoid is peculiar. The patient harbours virulent bacilli even after restoration to apparent health and the agglutination reaction may be lost without detriment to the individual.

Diagnosis.—(1) *Laboratory.* — This is the most decisive method. But it has many disadvantages in practice. Blood culture is positive usually only in the first week. Taking blood from the veins in some patients may be trying and when patients are seen later than the first week, it may be of no use.

The agglutination reaction is limited in value. It may be negative in some cases throughout. It may be delayed. The patient may have received inoculation previously. In the latter case the appearance of O agglutinins shows an enteric infection. It is only by cultural examination of the faeces that the particular organism of the enteric group concerned in the infection can be identified. A rising titre of the H agglutination has no value; for entirely different infections may also raise the titre.

Stool and urine cultures are not positive sufficiently early. For all these methods a good laboratory and special staff are required.

2. *Clinical*—A temperature usually continued but sometimes remittent, lasting for more than 10 days with a characteristic onset, a slow pulse rate, a pathognomonic facies, a soft enlarged spleen, and abdominal disturbance enable one to make a correct diagnosis in the majority of cases.

3. *Differential.*—The problem will vary with the locality. Here only some of those that are commonly to be met with in the state are considered:

(1) INFLUENZA.—Typhoid has usually a gradual onset, there is no respiratory catarrh of the upper air passages, and the constitutional symptoms in the early stages are less pronounced. The fever of Influenza rarely lasts for more than five days in the absence of complications.

(2) BRONCHOPNEUMONIA.—Some cases of typhoid are seen with bronchopneumonia appearing early and masking the true condition. An enlarged spleen, diarrhoea and deafness when present will suggest looking out for typhoid infection. When these are not present, the continuance of the fever with the disappearance of pulmonary signs will give the clue.

(3) ASCARIASIS.—Sometimes an ascaris infection gives rise to a continued type of fever and the pulse may be relatively slow. There is in many cases a peculiar smell in the breath of the patient with the infection, the patient may complain of something in the throat, and chilliness may be a feature. The fever disappears after the expulsion of the worms. On the other hand worms may complicate a typhoid fever case. Here laboratory diagnosis will have to be resorted to.

(4) MALARIA.—In patients residing in malarial tracts, in those who had malaria previously, and in those returning from a malarial district, it should be a routine to examine the blood for malarial parasites to settle diagnosis and avoid error in treatment. It is a different problem when malaria complicates a typhoid case,

The writer remembers a case with daily intermittent temperature and enlarged spleen and parasites in plenty in the blood. Quinine was given by the mouth for a few days. Not having any effect on the temperature, it was given by intramuscular injections. One morning, after 2 injections had been given, the patient developed severe abdominal pain with collapse and died soon. A post mortem showed typical ulcers near the lower end of the ileum with perforation.

(5) SEPSIS.—The writer had a fat lady suffering from continued fever and slight pain localised to the femoral triangle in the left thigh. The fever chart resembled closely a typhoid chart and the blood showed leukopænia. There were typhoid cases about. Not being able to account for the pain a distinguished colleague was called in for consultation; the case was strongly suspected to be typhoid. It was not then possible to confirm the diagnosis by a widal as there was no culture of organisms in the laboratory just then. Three weeks passed without the fever subsiding and the diagnosis not confirmed. A few days hence a palpable swelling at the site of pain was felt and it gradually increased and became fluctuant. The abscess was operated and the fever ceased.

(6) FILARIAL FEVER.—The presence of lymphangitis and tender enlarged glands, and a previous history of similar attacks serve to distinguish the condition.

(7) PYELITIS.—The presence of frequency of micturition and the condition of the urine differntiate the condition.

Other diseases in this connection which are occasionally met with are liver abscess, tuberculosis peritonitis, kala-azar etc.

Prognosis.—The mortality of hospital cases is about 15 %. Early hypostatic congestion with a pulse above 130 and a high temperature foretell a grave issue. Severe and persisting abdominal distension occurs in bad cases. Marked nervous symptoms such as delerium, coma, and subsultus tendinum indicate a severe infection but many cases pull through. A pulse keeping persistently above 140 indicates circulatory embarrassment and the longer the condition lasts the graver is the outlook. Haemorrhage is grave but need not be fatal. Perforation is as a rule fatal. Operation is in many cases impracticable and the results are far from encouraging. A delayed agglutination reaction indicates a bad outcome.

Treatment.—The general prophylaxis against the incidence in a State consists of the maintenance of a proper system of sewage disposal, a protected water supply, along with the detection and treatment of carriers.

The individual prophylaxis consists of the use of boiled water and milk and a course of T. A. B. vaccine during epidemics. The official vaccine consists of 1000 million killed typhoid bacilli and 750 millions each of killed para-typhoid A and B per c.c. The vaccine is administered subcutaneously in two doses of 0.5 c.c. for the first and 1 c. c. for the second dose at an interval of about 7—10 days. In the experience of the writer the vaccine is not a certain protective. The writer has seen cases developing typhoid within a few months of the injection. One case in special had each year in succession a course of injections for two years. Within 4 months after the second injection he developed what seemed to be a mild attack at first but after a few days apyrexial interval developed a relapse and he died of complications. In all these cases which will amount to nearly 200, the vaccine used was of Indian manufacture. Care was taken to see that the specified date had not passed by when the injections were given.

The writer has given the injection for all from 5 years to 50 years, to the attendants of a case and to the inmates of the patient's house soon after the case is suspected to be typhoid. The injections are usually given in the evenings. A constitutional reaction consisting of some general pains, malaise with some fever and headache takes place in some cases and passes away within 24—36 hours. The local reaction consists of a slightly raised wide patch of redness with tenderness which lasts for about 3 to 4 days. In some cases neither local nor general reaction occurs.

The management of a case of typhoid consists of the conservation of the patient's energy by proper and skilful nursing, a proper diet, control of fever, and the treatment of complications as they arise.

A good hospital is undoubtedly a better place for the carrying out of the essentials of management with the least fuss. However, it is not possible for all to find accommodation there during an epidemic in particular. Further, except among some of the educated, the idea of lying in a hospital is neither agreeable to the patient nor to his relatives. Chief among the disadvantages of the house are the customs and prejudices of the patient and his relatives *e.g.*, there are many who will refuse to make use of the bed-pan and urinal while in bed; difficulties may be encountered in ensuring proper ventilation of the sick-room. Proper disinfection of the excreta and linen of the patient is apt to be neglected. The attendants of the patient may refuse injections and are likely to infect themselves. Thus home treatment of a typhoid case is beset with many undesirable side-issues and will often

prove a strain upon the responsibilities of a conscientious doctor. Nevertheless, it has to be attended to in a large number of cases.

Disinfection.—In the case of a patient in a house, the excreta should be received in a bed-pan and urinal and disinfected by mixing with carbolic lotion 1 in 20 in equal quantity for urine and thrice the quantity for motions and keeping them for 2 hours before disposal. The patient's linen should be soaked in carbolic lotion 1 in 60 for about 6 hours before being sent for washing. The attendants of the patients should wash their hands in lysol lotion (a teaspoonful to a pint) before leaving the patient. All the inmates should receive a course of vaccine at the earliest possible moment and should be advised to use only boiled water for drinking. These are necessary for preventing the spread of infection.

Nursing.—The service of two nurses (one for day and the other for night) with previous experience of having attended severe cases of typhoid are highly desirable when circumstances permit. In severe cases skilled nursing will play a very important part in helping the patient to fight the disease. The nurse should keep a 4th hourly record of the pulse, temperature and respiration along with a note on the nature and quantity of food and fluid intake, the number and character of the motions, the urinary output, the hours of sleep, and any special symptoms such as headache, vomiting, cough etc,, It is the nurse's duty to attend to the hygiene of the mouth and body of the patient carefully and well. The presence of nurses will be a source of great peace of mind to anxious relatives and will enable the doctor to curtail unnecessary visits particularly when his services happen to be in demand in several quarters.

Oral Hygiene.—The teeth, gums, tongue and inside of the cheeks should be daily cleaned by a clean soft linen moistened with hydrogen peroxide diluted with an equal quantity of water and frequent gargles with an alkaline solution of 10 grs. of soda bicarb to an ounce of water or normal saliva will keep away accumulation of debris inside the mouth. The lips are best attended to by lightly smearing them with vaseline.

Care of Skin.—As a routine the patient should be sponged with tepid water for 20 minutes each time morning and evening. The skin over pressure points at the back of the patient should be rubbed with methylated spirit and some dusting powder applied for the prevention of bed sores in prolonged cases. During sponging the patient should be protected from draughts either by the

use of suitable screen around his bed or by temporarily closing the windows of the room.

Diet.—The following points for guidance are taken from R. Hutchison's "Elements of Medical Treatment":—

(1) The food should be light and nourishing.

(2) Fatty articles and too much protein are avoided: the former because of its natural repugnance to a febrile patient and the latter because it will throw additional strain upon the kidneys.

(3) Unless there is some strong reason to the contrary attention should be paid to the patient's likes and wishes.

(4) If the patient desires light solids, it is generally safe to let him have them.

(5) The patient can be fed up to the limit of his digestive capacity.

(6) Indigestible things like the seeds and pips of fruit might injure the ulcer.

Milk, bread, broken-rice conjee, buttermilk, glucose and fruit juice are those that find general favour among the patients in these parts. Whey, albumin water, Panopepton, and Brandy are used in special circumstances.

Milk is given diluted with ½ quantity or more of barley water and citrated when necessary in suitable quantities at 2 hourly intervals in the day. Feeding at night can be dispensed with if the patient is able to take adequate quantities (3 pints of milk generally for an adult) during the period from 6 a.m. to 10 p. m. The milk can be flavoured with coffee or tea.

To those who hate milk some broken-rice conjee with fresh home-made buttermilk can be given thrice or four times daily according to the quantity used by the patient. There are some who hate both conjee and milk. In these cases, fresh home-made butter-milk forms a useful and convenient diet. It is given at 2 hourly intervals just as milk but undiluted.

Whey and albumin water are used when there is abdominal distension or severe diarrhoea.

Much importance is recently paid to the calorific value of the diet. It is claimed that a high calorific diet (3000—4000 calories) prevents while a low calorific diet (less than 1000

calories) favours the occurrence of such complications as haemorrhage, perforation, and relapse. The likes and dislikes of the patient and his digestive capacity in the majority of cases in private practice act as barriers for the administration of a diet having a calorific value higher than that which can be attained with safety by the liberal and judicious use of the articles mentioned above. The writer remembers a case in which on account of difficulty in feeding by mouth, nasal feeding was resorted to and a high calorific diet tried. Abdominal symptoms such as distension and borborygmi became prominent afterwards and the patient died with symptoms pointing to perforation in a few days. The writer had come across an old medical practitioner of Coimbatore who told him that he had a record of having treated about 500 cases of Typhoid with no mortality, by regular administration of merely cold water in plenty and a teaspoonful of castor oil at night.

Alcohol.—The following extracts are given to show the value and use of alcohol in fevers. "The general belief is that alcohol is a stimulant to the central nervous system, to the respiration, and to the heart. These beliefs have been shown to be inaccurate". "Alcohol can be used for its mild anti-pyretic effect, food value, and its sedative effects in cases showing signs of nervous exhaustion such as sleeplessness, delirium, or a disinclination for food. The vast majority of febrile patients nevertheless do quite well without it, and it should never be given as a routine." "Alcohol when used as a food should be given in small and frequently repeated doses, and not more than 10 c.c. an hour of absolute alcohol should be given. Larger quantities of alcohol will not supply the body with any more food and the alcohol circulating in the blood will act as a tissue poison." In practice it is generally given as brandy in half ounce doses mixed with an equal quantity of water at intervals of 3, 4, or 6 hours, so that not more than 4 ounces is exceeded in the 24 hours.

Control of Fever.—"This is best carried out by sponging. Different modes of it, varying in severity may be used according to the case. The simplest and most generally applicable is to sponge the patient all over, bit by bit with warm, tepid, or even cold water." Therapeutically "sponging with tepid water is more efficacious than sponging with cold water for the latter produces vaso-constriction and thus lessens the heat lost by conduction and the amount of heat lost by raising cold water to body temperature is very small. Sponging with ice or ice-cold water reduces the temperature of the skin, but on account of the vaso-constriction

produced it does not reduce the internal temperature of the body. Sponging will produce little reduction of temperature in an air saturated with moisture or in a perfectly still atmosphere."

Treatment of some common complications:—(1) *Constipation* is treated by a glycerine enema every other day. Liquid Paraffin ½ oz. b. d. is useful during convalescence.

(2) *Diarrhoea* as a rule needs no interference unless the stools exceed four in the 24 hours. When severe it is treated by feeding with whey and albumin water. In addition, the administration of an enema of 20—30 of Tr. opii in 2—3 oz. of conjee water or Bis. Salicylas in 15 gr. doses t. d., may be employed if found necessary.

(3) *Tympanites.* The diet should be changed to whey and albumin water. Turpentine stupes should be applied frequently in the proper way. In addition, 10—15 m. of Ol. Turbenth. Rect. may be given as an emulsion in almond oil every 4 hours, keeping a watch on its effect upon the kidneys. Other measures which can be tried are an enema of half ounce of Turpentine in 6—8 oz. of conjee water or the passage of a soft rectal tube and leaving it there. Pituitrin ½ c.c. and acetylcholine 0.1 grm. are also recommended in extreme cases.

(4) *Haemorrhage.* Absolute rest may be secured. No food or water is given by the mouth for 24 hours. After this small quantities of whey may be given and the food gradually increased. An injection of morphia ¼ gr. should be given at once. The foot of the bed should be kept well raised. An ice-bag can be lightly applied over the right iliac region for not more than a day hoping this will check haemorrhage by reflex contraction of the bleeding vessel. Besides these mechanical aids, an injection of neo-haemoplastin or calcium chloride 1 gr. in 1 c.c. of water intramuscularly can be given to increase the coagulability of the blood. The prophylactic administration of calcium salts in the 2nd week appears to be a useful procedure but its real value cannot be stated here. In every case of haemorrhage the bed pan should be dispensed with, some padded cloth being used to receive the motions.

(5) *Perforation* is invariably a fatal complication. It is generally not possible to bring efficient and timely surgical aid to treat perforation, unless the case be in a good hospital. Even then the results do not seem encouraging. The writer has seen a case of perforation which was diagnosed quite early and surgically attended to under local anaesthesia. There was seen a small pin-point perforation in the ileum but by its side there

were several places where the bowel wall was seen threatening to perforate. The patient died some hours after in spite of the surgical aid given.

(6) *Delirium.* Mild cases can be controlled by an ice-bag to the head and tepid sponging. If this is not effective 23 grs. of paraldehyde, 10 grains of medinal or 15 grains of adalin can be tried. If delirium is wild it is best controlled by ¼ gr. morphia or Hyoscine Hydrobromide 1/100 gr. Lumbar puncture is indicated when there are signs of meningism.

(7) *Circulatory failure* occurs in severe cases and is mainly peripheral. A combination of strychnine sulphate 1/100 gr. atropine sulphate 1/200 gr., adrenalin m. v. in 10 m. of distilled water is recommended to be given by subcutaneous injection every 4 or 6 hours. Coramine 1 c.c. is said to be effective when the lung bases are congested.

Among some recent methods of treatment are :—

(1) *Bacteriophage treatment.* The following extract serves to show the present position of treatment with bacteriophage :— "This is credited with an action which captivates the imagination. The proper attitude towards this method of treatment in the present state of knowledge is one of scepticism. In practice its commercial exploitation is to be discouraged. Only carefully controlled studies are likely to bring us any nearer the truth, and for these one of the first requirements is that the bacteriophage employed shall be known to lyse the infecting organism and this in a commercial preparation cannot be used." The writer has once tried this treatment, using an Indian preparation, at the very commencement of a relapse. The relapse ran its course. However another relapse took place and the patient died of haemorrhage which was very severe.

(2) *Non-specific protein therapy.* This consists of the injection of such preparation as Omnadin, T. A. B. vaccine etc. The writer's experience is limited in this method; but in a few cases where he has used Omnadin, he has found it harmless and he is led to believe that it has some action in reducing the toxæmia probably by stimulating the formation of anti-bodies.

(3) *Specific serum therapy.* This has not yet come into popular and general use in India. Information regarding it may be summarised as follows: As a result of experimental study and observation on mice, Dr. Felix has prepared a new type of serum from highly virulent strains of B. Typhosus and he claims that its benefits are due to the presence in it of 'vi' anti-bodies. It is alleged that other commercial Sera do not contain these 'vi'

antibodies though containing "O" antibodies. Clinical trials made by him though on a small scale but under carefully controlled conditions have led him to conclude that the serum is beneficial in controlling toxæmia in severe cases. His result finds support at the hands of some others who have tried it independently. The results of these trials have been scrutinized by Dr. Goodall and subjected to criticism. The following facts are brought out :—

(a) The effects of the serum have been strikingly successful in a number of severely toxic cases though they may be small.

(b) Its effects are more reasonably explained by the presence in it of specific antibodies.

(c) The serum has not been found to be effective in all cases tried.

Very recently the serum has been prepared by Dr. Robertson of Shanghai according to methods advocated by Dr. Felix and the trials made by him in Shanghai in a series of 52 cases give support to the observations of Dr. Felix. It is hoped that the serum will soon find its way for trial in India and its value known to the benefit of the public.

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CASES AND COMMENTS

A Case Report—Cancer of the Head of the Pancreas

BY

G. G. Gatha, L. M. & S.,

C. M. O. Mangrol, Kathiawar.

A HIGH class lady, aged 48, began to show slight jaundice in April 1935, the urine and the conjunctivæ were yellow, but the pulse was not slow, nor the stools were clay coloured: there was itching all over the body and pains in the lower extremity muscles.

She was a chronic sufferer of migraine, used to get influenza every year and was operated upon for sinusitis of the antrum of Highmore in 1932.

When the ordinary treatment to remove her jaundice failed and when a little enlargement, hardness and roughness of the liver was felt, she was taken to Bombay and was submitted to all kinds of laboratory examinations; her blood film showed no malarial parasites; the count was also normal, neither Leucopenia nor Leucocytosis; in stools, no ova of worms, no cysts of amoeba, to be found; the bile salts were found in urine and serum; the gastric contents after the test meal showed no achlorhydria; the gall-bladder was found empty in cholecystography. Wassermann was negative; the Von Den Bergh revealed negative in direct but positive in indirect reaction; the sedimentation test was much accelerated so much so the cells would settle down within 16 minutes instead of four or five hours which should be the time in normal individuals.

In short, the sedimentation acceleration was the only frightening finding and so the conclusion arrived at, was either inflammation or malignancy: the Liver's hardness, roughness, and slight enlargement-because it was felt only one inch below the costal margin, when the patient breathed in deeply, went in favour of cancer, but pain, achlorhydria, haemorrhage and loss of weight, the four cardinal signs of cancer were wanting and so the diagnosis of Catarrhal jaundice was made by an eminent physician of Bombay.

She was advised Insulin 10 units before meals and the carbohydrate diet, with the idea of stopping the degeneration in the liver cells.

The poor patient submitted to this drastic treatment of needless and frugal diet for about a month but as it was not the right treatment nor the right disease she left allopathy and resorted to the Unani system.

After being treated by a Unani Hakim at Bombay for about nine months, she was again taken to a good laboratory in November 1936 but all the findings were the same as before with a little development of secondary anaemia for which she was advised campolon, besides the same Insulin and carbohydrates, restricting fats and milk altogether from her diet. Again the poor patient was forced to undergo the torture by needles, there being three Insulin and one campolon injections daily; she easily got tired and left off the suggested routine treatment.

She fell down from a staircase on the 1st December, 1936 and had to remain in bed for about a week on account of the pain in the lumbar region; on the sixth day of the fall, she began to run the temperature which ranged from 97 to 100; there was some cough also.

She was taken to a well-equipped hospital nearby where the radiogram of her spine was taken and thank God all parts were found normal, still the temperature was there and slowly and steadily she developed œdema of the feet, the puffy face and swelling of the abdomen.

The Surgeon in charge of the hospital, a Lt. Col., was consulted, he saw all my papers, heard the history, examined the patient thoroughly, specially the abdomen, where some fluid was suspected but no true thrill was found.

All the varieties of jaundice were counted such as obstructive, catarrhal, infective and toxæmic and so on; again the laboratory tests gave the same result; urine was specially examined for albumin and sugar but they were not detected, the reaction of urine was alkaline and the sp. gr. 1005; blood culture with the object of finding some bacteria therein, was done, but no growth occurred at all after four days, even.

The Surgeon gave his opinion in writing, "though the diagnosis of catarrhal jaundice is done, I suspect malignancy somewhere; and the case is incurable".

This was in the first week of January 1937 when there were four prominent symptoms, the infallible jaundice, the oedema of

the face and feet, the so-called ascitis, and the fever ; the enlargement, roughness and hardness of the liver were less marked on account of the swollen abdomen.

The patient being in a very well-to-do condition, was quite convinced that the doctors would not be able to cure her and left for Delhi to be treated there by the eminent Hakims of the place ; I was asked to accompany to watch over the progress.

The party left for Delhi on the 11th February. The first Hakim tried his best for 22 days, but as no relief was found, another of a very high reputation was called upon ; he asked me to stop the campolon injections which I was giving and kept her on mutton soup and pomegranate juice only, forbidding every other articles of food ; again he gave her purges. We know, there is no nutritive value in soup. This fasting treatment and the diarrhoea developed by his medicines, rapidly made the patient lose her weight and she was much emaciated within a week.

My advice to give up the treatment was discarded because the Hakim Saheb explained that she was passing out her disease through the stools and advised her not to care for the weakness. Day by day she wasted, her urine quantity was lessened to only four ounces per day and she passed it only once ; of course the swellings increased and she began to feel drowsy on the 15th March 1937 ; certainly uraemia was beginning ; on the 17th she began to bleed from her mouth and her stools also were blood smeared, now she was a perfect picture of Cancer, but I could not feel the liver so much enlarged as it should be in the Cancer of that organ. I have seen four or five cases of liver carcinoma and found it very enlarged and hard, in one case upto the umbilicus.

On the 18th, she got very shooting pains in her left flank and became unconscious, the urine had to be drawn out by the catheter, the quantity only two ounces, the colour black, and the consistency very thick.

The relatives of the patient wanted me to call a good Surgeon and get her abdomen tapped, in order to give her some relief ; there was so much pressure on the viscera that the anus and the uterus were both prolapsed, this was the report from the nurse ; I called on Col. Clifford of the Willingdon Hospital. He saw the patient at 12 noon on the 19th, heard my history, and at once said it was a case of the Cancer of the head of the Pancreas, she might live for a few hours and tapping would kill her instantaneously of shock ; he thought the abdomen was full of cancerous growth rather than the fluid, because he could not feel the thrill. He

advised me to always suspect the Cancer of the head of the Pancreas in all cases where jaundice lasted for more than six months.

The patient breathed her last on the 20th March at 1 p. m.

The points of interest in the case are :—

(1) The true diagnosis was done only on the eve of death.

(2) Absence of the cardinal signs of cancer though they existed for about two years ; the real symptoms developed only two days before death.

(3) All the signs, symptoms and progress showed it to be a case of liver disease, primarily, though they were secondary due to the pressure of the head of the pancreas on the common bile duct and portal vein.

Dear readers, though this is a rare disease, please note that it is very misleading and suspect it whenever you find jaundice existing for more than six months, because, " Pancreatic growths can be removed by operation and many patients can be cured if diagnosed early but it is very difficult to do so", says a good book on Medicine.

A Short Case Note

On a Case of Placenta Praevia with both Feet Presenting

BY

J. M. Datta,

A. M. O., Khobong, T. E.

A MUNDA woman aged about 20 years, 3rd para pregnant eight months, in labour for 6 hours, was admitted into the hospital at about 1 p. m., on August 12th 1936 in a condition of semi-collapse with severe bleeding per vagina. She was actually lying in a pool of blood clots.

Abdominal Examination.—Uterus slightly deviated towards the right and not contracting well, foetal head in the fundus of the uterus, back in front and could be traced as far as symphysis pubis and small parts towards left and below.

P. V. Examination.—Clothes and external genitalia—full of clotted bloods—blood still oozing—vagina full of blood clots, left

foot was seen in the vaginal outlet, other foot could be palpated high up in the vagina, cervix fully dilated, fingers passed above inside the cervix placental margin was palpated towards the left side.

Diagnosis.—Marginal placenta praevia (both feet presenting.)

Blood clots from the vagina were removed as far as possible. Right foot was pulled down and slight traction given on both feet to ensure arrest of further bleeding. Bleeding stopped, pains returned, and the delivery proceeded normally. Within half an hour she gave birth to a still born female child with some assistance at the time of the delivery of the head. Placenta followed within 15 minutes and there was no further bleeding. The diagnosis was confirmed after delivery of the placenta.

She developed puerperal infection which commenced on 3rd day but subsided on 9th day, with intrauterine glycerine and with 5% Iodine treatment.

Placenta Praevia cases are very rare amongst the labour women so far as hospital statistics show. They are not keen in reporting any abnormality during pregnancy *e. g.* occasional slight show of blood, headache etc. as they do not think such symptoms to be of a serious nature. Some deaths amongst the women in labour in the lines which are reported as sudden deaths, may be cases of undiagnosed Eclampsia or Placenta Praevia.

This case is interesting because of the fact that although the symptoms at the commencement of labour were alarming, the case ended happily.

It is worthy of record that nature ensured an easy delivery in this case by causing both feet to present through the os. This fortunate circumstance must be almost unique in the records of Placenta Praevia cases.

My grateful thanks are due to Dr. W. F. Whaley, our chief medical officer for his kind permission to pulish this case note.

A Case of Tonsillitis with acute Glossitis*

BY

H. P. Datta, L.M.F.,

Sookerating T. E. P.O., Doom Dooma, Assam.

FAGNI F, aged 22 years, was admitted into Hospital on 9-2-37 at 4 P. M. with the following complaints:—Tonsillitis of both sides, cough, enlarged painful glands at the angle of the jaw, Temperature 101.4, pulse and respiration 102 and 24 respectively per minute.

She was put on a dose of Salts, alum and pot. chloras gargle and application of pigmentum Mandl to Tonsils and a mixture containing glycerine and pot. chloras, three times daily.

At 7 P. M. she was found to have developed acute glossitis. Tongue was much inflamed, swelling extending to the neck, and the tongue protruding beyond the teeth. It was very painful. She could not take any food nor could she speak at all.

At 7-30 P. M. milk 4 c. c. was injected intramuscularly.

10-2-37—In the morning, as no marked improvement was noticed and as the patient was in much trouble, the Medical Officer was consulted. He saw the case and advised Antistreptococcic Serum and intravenous Urotropine. Accordingly, 10 gr. Urotropine was injected at 10 A. M. and Polyvalent Antistreptococcic Serum was injected in the evening.

11-2-37—Patient much improved, oedema of tongue less. She could speak and take tea in sips. Within a couple of days, tongue was almost normal and Tonsils were also much better.

12-2-37—Patient developed Pneumonia which was most probably due to inspiration of infective substance into the lungs. She was treated with intravenous Alcohol in combination with other methods and was eventually cured and discharged. During discharge, Tonsils and Tongue were normal in appearance.

The points of interest about the case are the following :—

(1) Comparative rarity of acute glossitis as concomitant of Tonsillitis.

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* Read at a meeting of the Assam Frontier and Budla Beta Medical Society held on 27-3-37.

(2) Aspiration pneumonia following Glosso-tonsillitis.

(3) Serum acted as specific in acute glossitis.

Acknowledgment:—My grateful thanks are due to our Chief Medical Officer Dr. W. F. Whaley M.D., for his advice during the treatment and kind permission to publish the case note.

Pantocain as a Local Anæsthetic

BY

T. S. Shetty, Z.L.O., D.O. (Vienna),

Surgeon Eye, Ear, Nose, Throat Hospital, Kanudukalhan, Chettinad, S. I. R.

For the last two years I have used pantocain extensively in my practice and am convinced after observing its effects in over 500 cases that this drug has completely replaced cocaine.

In my hospital for diseases of the Eye, Ear, Nose and Throat I have used this drug for the following conditions in addition to numerous other cases where records were not kept.

	No. of cases.	*Strength of drug.*
Removal of foreign bodies in cornea and conjunctiva	48	1%
Tonometry ...	102	1%
Iridectomy ...	26	1½%
Elliot's Triphining for Glaucoma ...	13	1½%
Probing lacrimal ducts (several sittings)	6	1%
Cataract operations in conjunction with 1% novocain injection to the orbicularis and retrobulbar ...	97	1%
Keratome incisions to let out pus from anterior chamber in hypopion ulcers	21	1½%
Suturing deep incised wounds in the tongue	3	1½%

In addition to these, I instil pantocain 1% to cases of trocoma which require the use of coppersulphate sticks. This prevents the most unpleasant burning attended with this treatment, a factor to be noted in private practice. In children that require swabbing with strong silver nitrate solutions, I instil drop pantocain a few minutes before the swabbing inspite of the fact that pantocain

itself is attended with slight burning sensation at the 1st instillation.

In Ear, Nose and Throat work I have used pantocain for several cases of trimming the uvula and the phrenum of the tongue in tongue-tie. In cauterising (the granules of) the throat and the turbinates and preliminary to injections of novocain in operations of the nasal septum and polyps and in Coldwell Luc operations, I swab the area with 1½% pantocain and in some cases plug the area with pluggets of cotton soaked in pantocain 1%.

In all cases of tonsil operations, most of which I do under local, except in children, I invariably swab the area of the pillars and surface of the tonsil and the uvula and the pharynx with 1% pantocain. This is important as it goes a long way in preventing unpleasant retching both during injections of novocain and during operation. Instead of swabbing, it could also be sprayed.

In cases of posterior rhinoscopy, it is best to swab the throat with pantocain 1% as it will facilitate the examination. I have removed with greatest ease foreign bodies like fish bone etc., from the throat by spraying 1% pantocain to the area.

I am of opinion that cocaine can be completely replaced by pantocain as a superficial anæsthetic. The latter has the following advantages:—

(1) It is less costly.

(2) It is quicker in action.

(3) It is not injurious to superficial epithelium specially in cornea.

(4) It does not require a licence—(a great factor).

(5) It is less toxic.

A case of Spontaneous Bleeding from the Gum in Purpura

BY

Dr. S. K. Gupta, B.D.Sc.,

Surgeon Dentist, Ambala, Cantt.

A GIRL of 5½ years was brought to me at about 4 P.M. for profuse and spontaneous bleeding from one of her tooth sockets. The bleeding had started since the morning and the parents had consulted the local doctors before coming to me.

On examining the mouth, it was found that the bleeding was from the socket of a carious right lower second molar (deciduous) from which the crown was gone. On enquiring from the family doctor, it was found that he had administered stypticin hypodermically without success. As the bleeding was very profuse and the child was looking very pale and restless, it was decided to administer a general anaesthetic, remove the roots and plug the socket. The doctor was called in who pointed out that since noon that day, some "petechiae" (spots) were seen all over the body which were typical, and it appeared to be a case of purpura. Evipan sodium was administered, roots were removed, and the sockets were plugged with tannic acid and gauze. (Bleeding was capillary in character.)

Next day, when the patient was brought to me again, there was less bleeding but it had not quite ceased. It was thought inadvisable to remove or disturb the plug as yet. 2 c.c. of haemoplastin were administered and when the patient was seen again after twentyfour hours, the bleeding had entirely stopped. The plug was removed and the socket healed up without further incident.

The interesting features about the case were that at first haemophilia was suspected but this condition is seldom seen in females. The spots were seen subsequent to the commencement of bleeding. There was no known case of purpura in the family.

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EDITORIAL

Autonomy and the I. M. S.

On the 1st of April 1937, the Government of India Act of 1935 has come into force and the 11 Provinces of India have thenceforth become autonomous Provinces. In other words, the administration of the Provinces, will be run by ministers, chosen from the Majority group in the Legislative Assemblies of the Provinces and responsible only to their respective legislatures, subject of course to innumerable safeguards and individual judgments and discretions of Governors. In six out of the eleven Provinces, the Indian National Congress, is the majority party which has decided to take up Office. The Public Services, for obvious reasons, got perturbed and on the eve of the inauguration of Autonomy, some, to wit, the guardians of Law and Order in Madras, began to cry 'S. O. S' and sought the protection of the Governor against possible ill-treatment or harassment by the would-be Ministry, which was readily granted. A similar protection was given in one or two other Provinces as well. This is nothing short of an assurance given by the Governor to safeguard their position, as contemplated in the Act. But a similar protection asked for by the Congress Party against possible misbehaviour by the Services or unnecessary interference by the Governors in the day-to-day administration of the Provinces, was denied to it, though there was nothing unconstitutional about it. This, however, is by the way.

Yet another service that had come in for special treatment, not by the Provincial Governors but by the Governor-General and the Secretary of State was the I. M. S. In the recently issued (24-3-37) Press Communique of the Government of India, the functions and composition of the Indian Medical Service under the New Constitution under both the Central and Provincial Governments have been defined and here we notice a perpetuation of a service by a *fiat* of the Governor-General without consulting the popular representatives in the Provinces. We had on more than one occasion pointed out that the Provinces had no more need for this costly service and that a separate Civil Medical cadre should be constituted which would result in economy without impairing efficiency. But our advice was unheeded. Now, what are the grounds for the perpetuation of this service in the Provinces which have since become autonomous? They are mainly two in number, which in the words of the Services Sub-Committee of the first Round Table Conference are, (1) 'that, in order to provide a war reserve, the Provinces of the future should impose liability to military service on a sufficient number of their officers and (2) that the Provinces should take steps to recruit a fair and adequate number of British Officers to meet the requirements of the Army and of British Officials in India and pay them such salaries as would bring about this result'.

With regard to the first of those obligations, it had been abundantly proved in the late Great War, that the Provincial Civil Medical men recruited to the Army were equal, if not superior to the I. M. S. men and in loyalty, efficiency and devotion to service, they had not lagged behind their European compeers. The Provincial Governments will continue to supply the right type of men, from among their own cadre but they can no longer tolerate the forced entertainment of the military medical men in the Civil Services of the Provinces on fat emoluments and pensions which their slender resources can ill-afford. The old method of recruitment by competitive examination for Europeans and Indians alike has been given the go-bye and has been replaced by a system of recruitment by nomination, so far as the European element in the services is concerned. Thus, the Provinces have all along been and will continue to be dumped with I. M. S. men, of ordinary intellect, as, however fair, just and equitable the nominations may be, favouritism in some form or other will prevail and human nature being what it is, power and influence will always gain the upperhand and superior intellect with no backing up will go to the walls. In a matter of life and death, with which the

Medical Department is concerned, real merit must always count and so long as we are asked to pay the piper handsomely, we have a right to demand good tune-men of proved worth and ability. This nomination business is nothing short of tinkering with India's money and Indian lives.

With regard to the second obligation, we find that the total strength of the I. M. S. Cadre has been reduced from 1st April '37. The I. M. S. cadre as stood on 31st March '37, was composed of 649 officers, 386 British and 263 Indian. Of these 386 British Officers, 200 were in the Military Branch and 186 in the Civil Branch. Of the 263 Indian Officers, 154 were in the Military Branch and 109 in the Civil Branch. From 1st April, 1937, the total strength will be reduced to 584 officers, 386 British and 198 Indian. Of these 386 British Officers, 220 will be in the Military Branch and 166 in the Civil Branch. Of the 198 Indian Officers, 144 will be in the Military and 54 in the Civil Branches respectively.

Thus it will be seen that the reduction of 65 Officers was only in the Indian section, the British element remaining intact. Again, the number of Indian I. M. S. men allotted for Civil Branch has been considerably reduced from 109 to 54. *i.e.*, by 55 officers, while the reduction of the British element in the Civil Branch is only 20. This is a glaring injustice and it is only an attempt to placate the British Medical Association and the British Public and at the same time assure the British I. M S. Officers, financial stability and monopoly of private practice by the withdrawal of that keen competition expected of their Indian rivals. The old, time-worn slogan, 'British Doctors for British Officers' is after all a myth and cannot hold water for a moment, when it is noticed that Indian Doctors thrive well even in England and no such racial bias is raised there.

Under the present re-organization, the number of I. M. S. Officers (excluding Burma), the Provinces will be required to employ eventually, will be reduced to 160 of whom 122 will be British, 38 Indian. Thus the old proportion of 2 British to 1 Indian has been converted to roughly 3 British and 1 Indian. This, indeed, is Indianization with a Vengeance! The Press Communique, however, is generous to concede that it will be open to the Provinces to employ additional I. M. S. Officers, British or Indian, by arrangement, provided that the Officers can be spared by the Military authorities.

Another concession that has been granted is that 'no single province will however be under statutory obligation to employ

more than 19 British Officers, many of them considerably less and no administrative post under the Provinces except that of the Inspector General of Civil Hospitals, Peshawar, who will also be responsible for the Medical administration of the tribal areas, will be reserved for an I. M. S. Officer'. Thus, the post of Surgeon-General with the Government of Madras, need not necessarily be filled by an I. M. S. In the Madras Presidency, 29 posts were reserved for the I. M. S. in the past. In future it will only be 19 and this number must be strictly adhered to. The Ministry of Medicine and P. H. should in filling up the post of Surgeon-General, select the senior-most official from the Provincial Medical List or any senior non-official medical man for the place, so that a new orientation may be given to the Medical and Public Health policy of the Government, without allowing it to run in the same old I. M. S. groove. While we have the greatest regard for the British I. M. S. Officers, we no longer wish to be spoon-fed by them. Here is the acid test for our Autonomy.

GLEANINGS FROM MEDICAL PRESS

Surgery

X-Ray Treatment in Chronic Otorrhoea.—On the basis of a series of 280 cases Z. G. Rabinovitch (*Rev. de Laryngol., d'Otol. et de Rhinol.*, June, 1936, p. 660) recommends a method of treatment which consists in exposing the ear to small therapeutic doses of x-ray with the focus of the tube at a distance of 25 cm. The irradiations are repeated every ten days. Four sittings are called one series of treatments, and this is followed by a waiting period of four weeks. The maximum number of treatments for very obstinate cases was three series. In view of the intractable nature of the disease process, the results of x-ray treatment may be considered as *good* : 18 per cent. completely cured, 20 per cent. markedly improved, the rest stationary. After the first treatment there is a period of reaction, with slight fever, earache, and increased discharge. Then gradually, in the favourable cases, the middle ear begins to cicatrize, granulations disappear, discharge ceases, and perforations close. The x-rays act by stimulating the development of cicatrical fibrous tissue. Some of the obstinate cases were found to have chronic affections of the nasal cavities (polypi, sinusitis) or dental caries. The ear condition began to respond after the affected nasal sinuses had also been irradiated or after removal of carious teeth. Caries of the bone in the epitympanic region is no contraindication. Several cases in the series responded very well to the x-ray treatment. Areas of caries in the temporal bone are clearly shown in several radiographs reproduced in the text ; other plates taken at the end of a period of treatment show new tissue formation with calcium deposit in those same areas.—*B. M. J.*

Radium Treatment of Lesions About the Head, Face and Neck. William H. Kennedy.—*J. and S. M. A.* 29 : 513 (Oct.) 1936.

The author's summary is as follows :

From the topographic standpoint, the head, face and neck with their broken contours and multiplicity of divergent planes present a field demanding great adaptability in any agent for local therapy. The various technics of radium application meet this demand in a satisfactory manner.

From the anatomic standpoint, this field, in which important organs of small dimensions are brought together in close proximity, is peculiarly suitable for radium therapy, because with radium it is possible to concentrate the radiations in very small areas, and, with the variety of technics that are available, to obtain maximum results in the lesion with the minimum risk of damage to adjacent structures.

From the histologic standpoint, malignant tumors in this field are favorable objects for radium therapy, because with few exceptions their cells are radio-sensitive.

The great majority of tumors in this field are conveniently accessible for interstitial irradiation.

Radium is the method of choice for nearly all malignant tumors in the field and for many non-malignant tumors, precancerous lesions of the skin and mucous membranes, and circumscribed dermatoses, especially when these are localized to the eyelid, nose and region of the ear. The cosmetic results of treatment are of peculiar importance in this field. The cosmetic results after radium treatment are far superior to those after surgery and are frequently superior to those after application of x-rays. The radium scar is soft, elastic and often invisible.—*The Ear, Nose and Throat Monthly.*

Intracranial Injuries of the New-Born. — The general opinion of intracranial injuries of the new-born is that they are always serious and better fatal. But according to R. H. Nattrass

the commoner examples are usually unrecognised and thus untreated, so that the child survives subject to the risk of mental and physical impairment. From a study of the causes of intracranial injuries, Nattrass deduces that diagnosis is greatly helped by a detailed knowledge of the labour. The clinical signs and symptoms are neither uniform nor characteristic. Respiration, after being established with some difficulty, becomes slow and irregular. There may be focal or general convulsions, rigidity of the neck, inequality of pupils, and either extreme lethargy or great restlessness. The sucking reflex is often impaired or absent. Nattrass points out that the condition of the anterior fontanelle is often misleading, and he urges the use of lumbar puncture as a relatively easy method of establishing diagnosis as well as affording decompression. In discussing treatment he mentions, however, that the intracranial pressure may also be lowered by rectal injections of 2 oz. of 10 per cent. saline given every 4—8 hours until symptoms subside. Under the same heading, too, he shows that intracranial damage may be aggravated by the various vigorous methods still, unfortunately, being used for resuscitation. A newborn baby that fails to breathe when the mucus from the throat has been adequately removed—a measure followed perhaps by gentle traction of the tongue and the use of a stimulant drug such as Coramine—has probably sustained a brain injury, so that violent manipulative methods will certainly do harm. Warmth is important and the baby must be treated in a darkened room and not put to the breast until all apparent danger is over. Oxygen and carbon dioxide must be available for dealing with cyanotic attacks and if slowly continuing hæmorrhage is suspected or occurs in association with the lumbar puncture, it is probably useful to inject about 10 c. cm. of maternal blood into the infant's buttocks in the hope of encouraging coagulation.—*The Lancet.*

Kohler's Disease of the Scaphoid.—Willy Smets (*J. Chir.*, Brux., November, 1936, p. 390) in a study of Kohler's disease of the scaphoid has distinguished two characteristic forms: that which is typical of the disease and that which is complicated. A study of the literature in 171 cases has enabled the author to give a detailed review of the subject. The disease is primarily one of childhood, occurring between the fifth and tenth years as ossification of the scaphoid takes place. It is seen twice as often in boys as in girls, and in the case of boys the disease appears to develop at a rather later age. The condition is usually unilateral, and out of 157 cases it was bilateral in only thirty-three. Changes in the scaphoid are not always accompanied by symptoms, and may only be discovered as a result of x-ray. In the typical form of the disease the child limps, complains of pain in the inside of the foot, and walks with outer side on the ground. Slight œdema may be seen over the instep. The skin may be slightly reddened with increased warmth, and there is pain on pressure localized over the scaphoid. The movement of the tibio-tarsal joint is painless, but torsion or adduction of the foot causes pain. The general condition is usually good; the x-ray appearances are characteristic and unmistakable. In typical cases the prognosis is good, but in the complicated form there may be abscess or sinus formation, necessitating subsequent amputation. This development is seen particularly in case of tuberculous scaphoiditis. In these cases treatment should consist of immobilization in plaster and heliotherapy, with treatment on general lines. If a cold abscess is present it should be aspirated after injection of a modifying liquid. When a sinus forms curetting or removal of the scaphoid may be necessary. In the simple typical form of the disease it may only be necessary to guard the foot against any rough usage, to give local irradiation, calcium, and vitamins. If the scaphoid is painful and swollen rest in bed combined with ultra-violet ray therapy and medical treatment may be sufficient, unless the child is particularly active, when immobilization in plaster may be necessary. Flat-foot may be avoided by wearing a raised sole. Anti-rachitic treatment should be given in all cases, and when thyroid insufficiency is present this should also receive attention.—*B. M. J.*

Medicine and Therapeutics

The treatment of Constipation by Endocrines.—R. Pugliese (*Minerva Medica*, July 28, 1936, xxvii, 83) has experimented with sixteen cases of chronic constipation by means of injection of posterior pituitary and suprarenal extract called "asthenoglandulin" given intramuscularly. By this means in eleven cases, either atonic or spastic, a lasting effect was produced, and in the remaining five cases the effect was uncertain or negative. In favourable cases a first injection of 0.5 c.cm. was sufficient for the most part to regulate the bowels for a week and the subsequent injections had an action of which the duration was progressively increased. In three cases, however, a single injection had a permanent action without the necessity of going further. The author's explanation is that the hormones injected modify the

vago-sympathetic equilibrium in such a way as to cause an optimum tone in the intestinal muscle so that it can regularly respond to the physiological stimulus caused by the presence of the fæcal mass in the colon. A condition favourable to its action is a low blood-pressure. The best results were obtained in women who were "below par," dyspeptic and with a suspicion of tuberculosis in such condition as to lack that physiological stimulus which causes a regular evacuation of the bowel.—*The Practitioner.*

Modern Methods of Preventing Measles.—J. S. Baird and L. W. Pumphrey, *Pennsylvania M. J.* 39: 765 (July) 1936.

In sixty-six children (average age, 4 years) the prevention of measles with placental extract was attempted. In 58 per cent measles was successfully prevented. In the remaining 42 per cent, generally speaking, the attack was modified — with an average incubation period of eighteen days. The striking feature of the study, however, appears to be in the 100 per cent prevention attained in fourteen children with whole (unfractionated) placental extract. Obviously fractionation is desirable if it is possible, in the interest of refinement and concentration of the material, but in the group treated with the several different protein fractions only 46 per cent were fully protected. This appears to agree with McKhann's observation that the fractional preparations, *i. e.*, those containing only euglobulins or pseudoglobulins, do not have the same measles antibody potency as the whole extract. It is hoped that a method will be speedily found by which the antibody potency of the whole placental bulk will be made available. It is this material which, as shown, gave perfect prevention.—*A. J. D C.*

Ophthalmology

Nitroglycerine for Night-Blindness.—Although the cause of defect in adapting, or an inability to adapt, the faculty of vision to faint illumination is somewhat variable, it is apparently agreed that spastic conditions of the retinal blood-vessels are not infrequently found. Accordingly, R. de R. Barondes (*The British Journal of Ophthalmology*, September 1936, xx, 528) recommends the use of vasodilator drugs to relieve the spasm. In five adult cases it was found that after the administration of nitroglycerine (0.003 to 0.06 gm.) given in coated tablets the sensitivity of the eyes gradually increased and after five to ten minutes patients could move about a darkened room. Care must be taken in the use of nitroglycerine and if actual degenerative changes are present in the walls of the arteries no benefits can be expected. It is suggested that proper doses of the vasodilator drugs might be administered to those working more or less continuously in the dark and to whom it is especially important to be able to see in darkness, such as spies in war-time, navigators and aviators who do night-flying.—*The Practitioner.*

Irido-corneosclerectomy for Glaucoma.—C. Berens (*Amer. Journ. Ophthalmol.*, June. 1936, p. 470), prompted by the late infections following trephining and failure of filtration after Lagrange's operation, has evolved irido-corneosclerectomy. It is most successful in chronic primary non-congestive glaucoma, where there are few secondary iris changes, minor field loss, and where miotics lower the tension. It is useful in secondary glaucoma and after cataract extraction. The operation is not followed by serious contraction of field, and it does not hamper cataract extraction later. It is contraindicated in buphthalmos, if any vessels are seen on the iris, in arteriosclerosis, and in the presence of extensive peripheral synechiae. A conjunctivo-corneal flap extending 1.5 mm. into the cornea is prepared, and an incision 1.5 mm. from the limbus and 5 mm. long is made into the anterior chamber. The sclero-corneal lower lip of the wound is then punched to leave a serrated edge and a broad total iridectomy is made. The conjunctival flap is then stitched back into position. All the blood is next washed out from under the flap by the insertion of an irrigator, leaving enough half-normal saline to balloon the flap forward. A mask without any dressing is then secured over the eye. Massage of the globe is commenced a day or so later, the patient being allowed up the day after the operation. The author enumerates the advantages of the operation and discusses his results, the complications of the operation, and the history of iridosclerectomy operations.—*B M. J.*

PROCEEDINGS OF CONFERENCES, SOCIETIES, ETC.

The Tinnevelly District Medical Association, Palamcottah

Eighth Anniversary—Annual Reunion.

The Eighth Annual Gathering organised by the Tinnevelly District Medical Association commenced at 3-30 p. m. on Saturday the 23rd of January 1937, in the Centenary Hall, Palamcottah. Members numbering 81, including 7 lady doctors were present.

Ten members of the Tuticorin Medical Union, eight members of the Travancore Medical Association, and one member of the Madura Medical Association, graced the function.

The Business meeting commenced at 3-30 p. m. under the Presidentship of Lieut. Col., T. S. Shastry, I.M.S. The Secretary Dr. K. Rama Ayyar, M.B., B S., (Andhra)., read the minutes of the last monthly meeting held at Koilpatti, which were passed.

Then the election of office-bearers was proceeded with :—

1. *President*—Lieut. Col., T. S. Shastry, I.M.S., (Re-elected).
2. *Vice-President*—Dr. T. N. Govinda Ayyar, M.B. & C.M. do.
3. *Secretary & Treasurer*—Dr K. Rama Ayyar, M.B., B.S., do
4. *For Lady member*—Dr. Mrs. E. Bernard Card. do.
5. *For Rural Medical Practitioner*—Dr. K. T. Vengu. do.
6. *For the General Body*—Dr. T. S. Vaikuntaraman. do.
7. *For General Body*—Dr.N. Isaac.

Member-Auditor—Dr. K. R. Venkoba Rao, L.M. & S., (Re-elected).

At 4-30 p. m. the guests were entertained to tea and light refreshments and music. After group photo at 5-15 p. m. with the Surgeon-General and Dr. T. H. Somervell, the function proper began.

Lieut. Col. T. S. Shastry, I.M.S., the president of the Association offered a hearty welcome to all the members and guests and the President of the Reunion in suitable terms. He expressed his thanks to the representatives of the Medical Profession of the neighbouring State and the Districts.

Major-General Sir Frank Powell Connor, Kt., D S. O., K. H. S. L. R. C. P., (London). F. R. C. S. (Eng)., D. T. M. & H., I. M. S., the Surgeon-General with the Government of Madras, opened the Proceedings of the Conference as the President of the Reunion.

The Annual Report of the Association for the year 1936, was read out by the Secretary & Treasurer Dr. K. Rama Ayyar, M. B. B. S., (Andhra)., and was adopted. He stated that at the end of the year there were 105 members, and added that the ambition of the Association was to enrol every registered Allopathic Medical Practitioner as a member.

Dr. P. S. Srinivasan, L. M. P., of the Government Headquarters Hospital, Palamcottah, read out clinical notes on the

following interesting cases which were successfully treated at the Headquarters Hospital, Palamcottah:—

1. Fracture of the Skull.
2. Gastric & Duodenal Ulcer together in the same patient.
3. Spinal Injury.

} Operated on by Lieut. Col. T. S. Shastry, I. M. S.

In the abeence of Dr. A. N. Coomaraswami, B.A., M.B. & C.M., Superintendent of Ankylostomiasis Campaign in Ceylon, a paper on "Anti-Hookworm campaign" which he had prepared, was read by Dr. G. N. Kantayya, B.A,, M.B., B.S., a member of our Association.

A discussion on these cases followed, Dr. T. H. Somervell and the Surgeon-General contributing to the discussion.

Advance in Surgery.

The principal address of the day was delivered by Dr. T. H. Somervell of the Neyoor Hospital on the subject of "Recent Advances in Surgery". He said that last year he had been to England and the continent for a special study of the very recent advances in surgery especially the use of X-rays in fractures, and anaesthesia. He had learnt one lesson and one experience while he was in Vienna. As a loyal Britisher, he was pleased to find that while certain operations were done much better in Vienna than in London, there were others which were done much better in London than in Vienna. There was one matter in which the Viennese surgeons were excelling all others in the world, *viz.*, in the thoroughness with which they conducted their operations and provided for every possible contingency and the meticulous care with which they carried out every little detail. The operations in Vienna were done very very slowly; for some operations three hours and more were taken, but the doctors there did not consider the time wasted; such was the thoroughness and coolness with which they did their work. Dr. Somervell also referred to the wonderful developments in the treatment of fractures of every kind in the famous Doctor Bohler's Hospital (the Accidents' Hospital) at Vienna.

On this speech, Major General Sir Frank Connor, Kt., D.S.O., K.H.S., L.R.C.P., (Lond.), F.R.C.S., (ENG.), D.T.M. & H., I.M.S., *the Surgeon General with the Government of Madras, made the following observations*:—

"I have great pleasure to see Dr. T. H. Somervell in our midst in this happy gathering. His eminence as a Surgeon is well indicated by a recent paper which he has published in the British Journal of Surgery and Pathology of Gastric and Duodenal Ulcer in South India, and it is indeed a valuable and authoritative

contribution on the subject. I am glad that Dr. Somervell has laid stress on the importance of clinical observation and careful spade-work in the matter of diagnosis for the general practitioner. Many of the practitioners, especially those from rural areas, must have been listening with envy to Dr. Somervell's recital of recent advances in Surgery, that have been made possible by X-Rays. Radium. and easy and simple anaesthetics, for it will take a very long time before such facilities can come into general use in this country especially in the rural areas.

Substitute for Radium

I have, however, a hopeful announcement to make. In Madras, we have been working hard to find a method of supplying to rural areas Radium (which is very costly) which would be almost equally effective and will be possible of production on a large scale and we have now succeeded in producing 'Radon' which is a good substitute for radium. Very soon. it will be possible to manufacture this product on a large scale, and supply it to many parts of the Presidency. A Committee is just considering the question of the area to which the supply should first be made. I assure this gathering that this product will gradually become available for rual areas for those who understand how to use it.

Surgery of Dysentery

I am often surprised that so little progress seems to be made in the East in the Surgery of Dysentery where there is great scope and need. During the Great War in some desperate cases of dysentery, I have seen appendicostomy and caecostomy tried with good results in Mesopotamia.

Concluding Remarks by the Chairman (Sir Frank Connor) :—

The Tinnevelly District Medical Association

I feel it a great honour to have been invited to preside over the Anniversary of the Tinnevelly District Medical Association and am glad to see so many medical practitioners gather on a common platform. Medical Associations serve a very useful purpose, because they bring together doctors to talk about their experiences and compare notes and profit by discussions and consultations. and such Associations are very essential for building up a strong and united Profession. **Yours is the most prosperous Medical Association I have yet seen in South India.** You have got an active President and an active Secretary. and I congratulate them on the successful working of **this Association, which is the best organised District Medical Association that I have personally seen in this Country.** In this matter Madras is much ahead of other Provinces.

I appeal to all Doctors to join the Medical Association and thus help to promote *esprit d' corps* in the Profession. Other Provinces like Bombay. Bihar and the Punjab, are less advanced than Madras as far as I know in the matter of running District Medical Associations successfully.

Rural Medical Practitioners

I am very glad to see a number of Rural Medical Practitioners. at this meeting. If this class of Medical Practitioners, who are carrying on their lonely work in out of the way villages, amidst ignorant people make a success of their job. it is a great credit to them. They play an important role in the matter of the spread of medical relief to remote areas in this country; and they are working under great difficulties and handicaps. Before I came here I was told that most of them are almost starving! But, to day I am pleased to hear from all whom I have met that they are doing fairly well. In another District. I was told by a Rural Medical Practitioner that though he had received little money in the shape of medical fee for months, he has recently been given **a cow as medical fee** in a case. (Laughter). The scheme of Rural medical relief has not been much of a success in other Provinces. I am glad that our experience in Madras where there are 437 Rural Medical Practitioners is different. Several Provinces. have not yet

tackled the problem of ensuring medical relief in villages or are just now contemplating measures.

The Government have taken steps to utilise the Rural Medical Service for public health work also on a small honorarium, thus helping the Rural Practitioners to increase their income.

Medical Inspection of Pupils

I would emphasise the need for a comprehensive and thorough medical inspection of students particularly in Primary Schools. The eyes, ears and other important organs of the body of a student should be examined early. Otherwise you may never be able to repair any defect or injury. It is a pity that Medical inspection of Schools and Colleges has been stopped some years ago as a measure of Retrenchment owing to financial stringency. The Government have now under consideration a scheme for such work, and I hope that rural medical practitioners will also be deputed for this work on an allowance. I have recently had a discussion on this subject with a Central Committee at Madras and am optimistic that some good will result.

With a vote of thanks proposed by Dr. K. Rama Iyer, M.B.B.S., (Andhra), Honorary Secretary, to the guests, and members of the four Medical Associations, the meeting terminated.

Thereafter an excellent Dinner wherein 103 members of the profession participated, was served—the European portion for the Surgeon-General and some of the guests, and the Indian portion for all others. The grand banquet was brought to a happy close late at night after toasts were proposed and replied to as below :—

The King Emperor	...	Lieut. Col., T. S. Shastry, I.M.S
The Association	...	Dr. T. N. Govinda Ayyar, M.B. & C.M.
Reply	...	General Sir Frank Connor, Kt., I.M.S.
The Guests	...	Lieut. Col., T. S. Shastry, I.M.S.
Reply	...	Dr. T. H. Somervell, F.R.C.S.

In the morning at 11 A.M. a Medical Exhibition was held at the Centenary Hall, and the following Firms dealing with articles of their manufacture relating to Medicine, Surgery, and Midwifery exhibited their goods :—

NAME OF THE FIRM.	REPRESENTD BY
"Bayer"—Havero Trading Co. Ltd.	L. S P. Sarathy.
Hebbar Brothers, Madras.	Dr. K. P. R. Hebbar
Upjohn & Co., T. M. Thakore	S. Srinivasan.
Thiocalcin Co., Madras.	D. S. Iyengar.
Wassermann & Co., Ezra Bros.	K. Iyengar.
Bengal Immunity Co., Calcutta.	Dr. Banerjee.
Madras Chemical & Pharmaceutical Works.	Mr. Kasipathy.

Health Exhibition was not held this year by us, as the Palamcottah Municipality had held a very grand one just this week.

Monthly Meeting

The monthly meeting of the Association was held at the Tennis Club near the Taluk Office, Tiruchendur. Members nnmbering 36 including two women doctors were present.

After tea and sweet music the meeting began at 4-30 p. m. under the presidentship of Dr. K. Srinivasaraghava Iyengar, L.M. & S., Civil Surgeon, Tuticorin, and the President of the Tuticorin Medical Union.

The Secretary and Treasurer Dr. K. Rama Ayyar, M.B.B.S. (Andhra)., read the minutes of the monthly meeting held at the Head quarters on the 15th of March 1937, which were passed.

Dr. P. S. Srinivasan. L.M.P., of the Government Head quarters Hospital, Palamcottah, read out the following case-notes on patients who were operated on by Lieut. Col., T. S. Shastry, I.M.S. :—

1. A case of Tumour forearm left—resembling Hydatid cyst.
2. A case of Chronic mastoid infection—Cholesteatoma—left side.
3. A case of *Cancer stomach.*
4. A case of an Injury to the abdomen—an accident.

The following specimens in connection with the above were shown to the gathering :—

(*a*) Hydatid-like-cyst.

(*b*) Cancer stomach.

Dr. J. T. Moses, sub-assistant surgeon, Tiruchendur, showed a case of tubercular glands of neck.

There was a free discussion on all the cases and some of the members participated in the discussions.

Thereafter Lieut. Col., T. S. Shastry, I.M.S., summed up the salient and important features of all the cases and proposed a hearty vote of thanks to Dr. K. Srinivasaraghava Iyengar, for having kindly presided over the function. He offered his thanks to Dr. J. T. Moses, sub-assistant surgeon, Local Fund Dispensary, Tiruchendur, for the splendid arrangements made for the meeting.

After sea-bathing and temple worship, all the members had an excellent dinner, which brought the happy gathering to a close, late at night.

Health Exhibition

The Tinnevelly District Medical Association held its monthly meeting at Tiruchendur on Saturday, the 24th of April 1937.

A very successful Health Exhibition was arranged at the Board High School, Tiruchendur, at 10 A. M. which was attended by a large number of men and women, teachers, citizens, local officers and about 150 boys and 100 girls of the local schools.

Mr. Aramvalarthanatha Pillai, Sub-Registrar, Tiruchendur, welcomed the guests and requested Lieut. Col. T. S. Shastry, I.M.S., to open the Exhibition. He expressed in a short speech that such Exhibitions are very useful, instructive and beneficial to the masses and expressed his appreciation of the activities of the Association.

Lieut. Col. T. S. Shastry, I.M.S., explained in English the defects of our dietary in detail and pleaded for systematic and daily use in every house-hold of handpounded bran-rice, milk products (milk, butter, cream and curd), green vegetables and fruit, for encouraging the industry of handpounding of rice, growing green vegetables and fruits in adequate quantities and for increased dairy farming. Mr. Pillai rendered Colonel Shastry's speech into popular Tamil for the benefit of the audience.

Dr. K. Govinda Ayyar, the Rural Medical Practitioner of Kurumbur, explained in easy Tamil, the posters that were exhibited on the occasion for the benefit of about 150 little boys and 100 girls. The Exhibits consisted of posters on Tuberculosis, Smallpox, Flies, Mosquitoes and Cholera, Vitamins and First aid to the injured.

The Exhibition was kept open till late in the evening and the local Health Inspector explained the Exhibits to the teachers, boys and girls in batches of 20.

Bombay Medical Union

At a Special General Meeting of the Members of the Bombay Medical Union, held on 31st March 1937, to consider the recent Communique of the Government of India of 25th March 1937 regarding the scheme of Re-Organisation of the I. M. S., the following Resolutions were passed:—

Resolutions

(1) The Bombay Medical Union condemns unequivocally the policy of so-called Re-Organisation of the I. M. S.,

as announced in the recent Communique of the Government of India, on 25th March 1937.

In practice this policy means perpetuation of the European element in the service and elimination of the Indian element.

(2) The Bombay Medical Union hereby reiterates its oft-repeated demand for the complete abolition of the Civil side of the I. M. S.

The Ramnad District Medical Association

The seventh annual gathering of the Ramnad District Medical Association (formerly Chettinad Medical Association), affiliated to the Indian Medical Association, took place on Saturday the 10th April, 1937 at the S. M. S. High School Buildings, Karaikudi.

The proceedings began at 10-30 A.M. with the general body meeting presided over by Dr. F. Ysander, Vice-president of the Association in the absence of the President, Dr. B. V. Varadachariar, District Medical Officer, Ramnad. The following office-bearers were elected for the new year :

President : Captain B. Dayananda Rao, A.I.R.O.
Vice-president : Dr. F. Ysander.
Secretary : R. S. Srinivas.
Joint Secretary : N. R. Ratnaswami.
Treasurer : S. Subramanian.

Members of the Executive Committee :

Miss E. Ivatts,
T. S. Shetty,
S. Rajaram Bharathi,
N. Krishnaswami.

Auditors : N. S. Venkataseshan,
R. Bheem Singh.

After the welcome address by Dr. F. Ysandar, Rao Bahadur Dr. T. S. Tirumurthi, B.A., M.B. & C.M., D.T.M. & H., was proposed to the chair. The out-going Secretary, T. S. Shetty presented the report for the year 1936—1937 and it was adopted.

In moving the following resolution from the chair—" The members of the Ramnad District Medical Association place on record their sense of great loss sustained by the medical profession by the demise of Dewan Bahadur Dr. C. Natesa Mudaliar, M. L. C. and authorise the secretary to convey to the members of the bereaved family their sympathy in their grief ", Dr. Tirumurthi made an appreciative reference to the work of the late Dr. Natesa Mudaliar in the cause of the profession and hoped that the public would raise a suitable memorial to him. This resolution was passed unanimously the whole gathering standing.

In his presidential address Dr. Tirumurthi felt sorry that Dr. B. V. Varadhachariar, the President of the Association, was not present at the conference as he had to go on leave due to indifferent health. On behalf of those assembled and of himself, the secretary was authorised to communicate to Dr. Varadachariar their hope that he is improving in health and prayed for his perfect recovery, happiness and long years of usefulness to the profession.

Dr. V. Rama Kamath spoke of the good work done by the Ramnad District Medical Association which was replied to by S. Subramanian and T. S. Shetty.

After reading messages from sister associations and well wishers, by T. S. Shetty, the gathering adjourned for lunch.

The afternoon session started with a paper on ' Traumatic affection of joints' by Dr. R. Kalameghan of Trichinopoly. Dr. S. T. Achar, M.D. of Tanjore could not attend the meeting and in his place Dr. S. Padmanabha Sarma, M.B. & C.M., District Medical Officer, Madura spoke on " Empyema." The chairman delivered an interesting and impressive lecture on " Modern conception of the Pathology of Bright's Disease." After discussion on those subjects, the President in his concluding remarks congratulated the Association on its usefulness to the profession and was greatly pleased to find that members from distant parts attended the meeting. With the vote of thanks, the function closed with tea party and photo.

The Nimar Medical Union

The election of the office-bearers of the Medical Union, Nimar, took place on the 5th April '37, as under :

President:—Dr. T. D. Shahani, F.R.C.S.E., D.O.M.S. Civil Surgeon, Nimar.

Vice President:—Dr. S. Hassanali. A.M.O.,
Secretary:—Dr. R. S. Varma, M.B.B.S.,
Joint Secretary;—Dr. S. R. Kulkarni, L.C.P.S.,
Members of the Working Committee:—
Dr. Miss. Jeevanlata, M.B., B.S.
Dr. Miss. S. L. Mondker, M.B., B.S.
Dr. M. Attarirrahaman Shah, M.B.B.S.,

After the election, Dr. T. D. Shahani delivered a lecture on Glaucoma and treated the members of the Union, with tea and light refreshments.

BOOK REVIEWS

A Textbook of Medical Jurisprudence and Toxicology—*By Rai Bahadur Jaising P. Modi*, L.R.C.P. & S., (Edin.), L.R.F.P.S., (Glasgow), Examiner in Medical Jurisprudence in the Universities of Bombay, Hyderabad, Lucknow and Patna; Honorary Lecturer of Medical Jurisprudence, Seth Govardandoss Sunderdoss Medical College, Bombay; Late Reader in Forensic Medicine in the University of Lucknow and Professor of Jurisprudence in King George's Medical College, Lucknow—5th edition, 1936. Revised and enlarged, 823 pages + cx pages. One coloured and 139 text illustrations. Messers Butterworth & Co., (India), Ltd. Avenue House, Calcutta. Price Rs. 15/-

The book before us is the fifth edition of Dr. Jaising P. Modi's well known text-book of Medical Jurisprudence and toxicology. It is undoubtedly very popular with the students. In the preparation of this edition, opportunity has been taken to revise thoroughly all the chapters and to add new sections on Aspirin, Methyl salicylate, Thallium, Cinchophen, Oil of Eucalyptus. The new edition of the British Pharmacopoeia published in 1932 has been incorporated in this revised edition. Among the old chapters special mention may be made about those dealing with examination of blood and seminal stains, deaths from asphyxia, miscarriage and foeticide, infanticide, insanity and its medico-legal aspect and Life Insurance. The appendix which contains chapters on rules of evidence, medico-legal report forms, Indian Evidence Act, Code of Criminal Procedure, The Indian Penal Code, forms required by the Indian Lunacy Act, The Poisons Act and the Dangerous Drugs Act, is a special feature of the book.

The book is well printed and got up and reflects great credit on the printers and publishers. Dr. Modi has succeeded in his attempt to offer to the practitioners and students of Medicine and Law, a practical guide to the study of Forensic Medicine. We congratulate him on his excellent work and are quite confident that the present edition will be as popular as its predecessors.

A System of Clinical Medicine—*By T. D. Saville*, M.D., (Lond.), Edited by Agnes Saville, M.D., and E. C. Warner, M.D., F.R.C.P. Tenth edition, 1114 pages, illustrated. Edward Arnold & Co, London. Price *sh.* 28/-net.

This well-known text book of Clinical Medicine needs no introduction. This tenth edition is an improvement on the ninth, which appeared in 1933. New sections have been added on bronchoscopy, oesophagoscopy, special diet schemes, the endocrine factors in the menstrual cycle, the autonomic system and the hypothalamus, the cerebral ventricles and cerebral angiography. Recent advances have made it necessary, to write afresh, the sections on treatment. In the preparation of this edition, the editors have secured the services of such eminent doctors as Dr. Geoffrey Bourne, who writes on the heart; Dr. Geoffrey Evans, who writes on the diseases of the arteries; Dr. Maurice Davidson, who has revised the chapters on diseases of the lungs; Dr. Hamilton Fairley who has rewritten the chapters on Tropical Diseases; Dr. Patterson who has revised the chapters on the stomach; Dr. Rolleston who has added considerably to the chapter on fevers; Dame Louise Mc Ilroy who has revised the chapter on diseases of women and many others, who are equally well known and authorities in respective special subjects. Among new matter added are: the Lawrence, Moon-Biedl and Simmond's Syndromes, Pick's Disease, Von Gierke's disease, Lederer's and Sickle cell anaemia, Pink disease, Sarcoids; Scleredema, Hypertensive encephalitis, Paralytic ileus and proctalgia fugae.

By using small print for rare diseases and details of laboratory methods, the editors have succeeded in including a large amount of useful matter in the book. They have made it comprehensive and yet concise. It is, in our opinion, still the best book on the subject of clinical medicine. The practitioner and the student alike will find very useful information in its pages.

The general get up and printing are very good and reflects great credit on the printers.

The 1936 Year Book of General Surgery—*Edited By E. A. Graham*, M.D., Professor of Surgery, Washington University School of Medicine, Chicago, U. S. A. Year Book Publishers. Price 3 dollars.

This 1936 Year Book of General Surgery contains the epitome of the surgical literature of the past year.

A number of papers on important subjects by eminent men *e.g.* on cancer of the Lung by E. A. Graham, on cancer of the stomach by Sir James Walton and on Fractures of the neck and of the femur by Hey Groves, appeared last year. There are several articles on knotty problems like the question of the treatment of bleeding peptic ulcers and the treatment of head injuries, which will be of great interest to the practising surgeon.

New lines of treatment, like the injection treatment of hernia, a new operation by Lockhart Mummary for films, stricture rectum and Pannett's method of reduction of displaced semilunar cartilage, to mention only a few, are described fully.

Tannic acid treatment, thought to be the "final solution of the problem of burns" is being criticised and Ferric Chloride suggested as a better alternative, especially for milder degrees of burns. The Paramedian incision in acute appendicites is being condemned as causal of a high mortality and a right iliac approach recommended instead.

This above review, by no means exhaustive, mentions only a few of the large number of instructive and interesting abstracts of articles contained in this useful and readable book. We can recommend this book unreservedly to the large number of rising surgeons in this presidency as a ready compendium of the progress of surgery of the past year.—*P. G. Rau.*

Change of Life in Men and Women—*By Marie C. Stopes*, First Edition, Published by Putnam & Co., 42, Great Russell Street, London, Price 6 shillings nett.

Change of life or climacteric is seldom noticed or recognized in men for there is no visible sign in them such as the menopause in women and medical advisers attribute any bodily disturbances which generally take place in the early fifties or sixties to some disease rather than to climacteric. In women, Medical Science holds that fertility ceases with the menopause at or after 40, and with that ceases all ideas of their conjugal happiness. The author

contends, in this book, that after the climacteric in women, their femininity is not lost, they can still love and be loved and enjoy all the pleasures of a married life. She denounces the harmful delusion that it should be regarded as a time of decline and decay and quotes several instances to prove the existence of sex impulse in women after the climacteric. In fact, many women have asked her advice as to how to win back the lost affections of their husbands. We must only classify such women under 'sex abnormalities', for no woman who had had a strenuous life of nearly quarter of a century of sex-indulgence, child-bearing and child rearing would ever think of serious love after menopause unless she happens to be 'hyper-sexual', if we can coin such a word. The book is nicely printed and neatly-bound and we heartily commend it to our readers, as it is sure to give good food for thought and arouse scientific interest in a hitherto untrodden field.

Nature's way of Birth Control—*By Victor C. Pedersen*, M. D., F. A. C. S., Published by Messrs. Williams & Norgate Ltd. 36, Great Russell Street, London. W. C. 1. Price 3/6 nett.

The scientific world has quite recently been flooded with copious literature on Birth Control but most of them advocate Birth Control by artificial means. This book is, therefore, a welcome departure, for it points out in clear and unambiguous language how Nature has provided in the human mechanism itself, her own method of Birth Control, makes available clear information on a method which avoids the unseemly, unaesthetic and unreliable methods of artificial contraception. Written by a medical man and intended for laymen, the book has the force of authority behind it. The experiences of a large group of married persons who have successfully adopted this natural method of Birth Control are also cited in this book. The book will certainly repay perusal.

A Manual of Pharmacology.—By the late *W. E. Dixon*, Eighth Edition ; Revised by W. A. M. Smart, 1936, pp. 483. Edward Arnold & Co., London. Price 18/- net.

This popular manual is in its eighth edition. The book has been completely revised and much new matter added to cover up all the useful researches that have been made in recent years. To most of us the book is not new and it needs little by way of any

introduction to our readers. In the present edition much stress has been laid upon a knowledge of organic chemistry. All clinical observations of the effects of drugs have been specially noted and it gives valuable information concerning the effects of drugs on human beings. Prescriptions illustrating the practical application of the subject matter have been incorporated, which undoubtedly enhances the practical value of the book. We wish the present edition all success and continued popularity.

PREPARATIONS AND INVENTIONS

Para-Amino-Benzene-Sulphonamide. (Hewlett's.)—Prepared by Messrs. C. J. Hewlett & Son, Ltd. Wholesale Druggists and Manufacturing Chemists, 35-42, Charlotte Street, London, E.C. 2.

This preparation introduced under the simple but easily remembered name of P. A. B. S., is the new chemotherapeutic compound p-amino-benzene-sulphonamide.

This relatively simple substance has been shown to have the property of rendering the blood bactericidal to streptococci when administered by the mouth.

Protection can be obtained against different serological types, but no specific action aginst other organisms such as staphylococci and pneumococci has been recorded.

Evidence of its bacteriostatic and bactericidal action against hæmolytic streptococci has accumulated and the *Lancet* (Dec. 5th, 1936) says regarding the various sulphonamides on the market that "it has become an imperative duty to employ them, not only in puerperal fever, but also in other severe forms of streptococcal infection."

P. A. B. S.—is indicated in puerperal sepsis, erysipelas, scarlet fever, streptococcal inflammation of the throat and tonsils, meningitis and streptococcal arthritis.

As a prophylactic, it may prevent many complications attributed to hæmolytic streptococci.

Dose:—*P. A. B. S.* is supplied in 7½ grain (0.5 gramme) tablets, and the dose is 2 to 3 tablets three times a day after meals, which can be reduced as the symptoms subside.

The prophylactic dose is 1 or 2 tablets twice or three times daily.

Price, 8/—per 100; 72/6 per 1,000.

Cow and Gate Milk Food:—Manufactured by Messrs. Cow & Gate Ltd., Guildford, England.

Hard Luck—The Quads. — The delightful little Miles Quadruplets of St. Neots, England, whose advent has aroused such flattering and kindly interest, are now experiencing attentions neither flattering nor kind from an unexpected and very unwelcome source—the Income Tax man! When the Quad's nursery was opened by Mr. George Lansbury last year it was announced that the babies would be exhibited to the public daily on payment of a fee of 1/—. Since then many thousands of visitors have inspected through a special window the bonny babies so successfully reared on Cow and Gate Milk Food. Mrs. Miles at the receipt of custom has naturally watched the upward movement of the financial barometer with relief — for the expenses of maintenance are heavy. No one however seems to have anticipated the shadow of the Income Tax Collector with his crusty unimaginative demand for 2d Entertainment Tax on every 1/-!! No doubt the Quads will survive this financial setback as they have survived everything else, and it is hoped that a few extra cups of their favourite beverage will help to drown their sorrows and restore their usual cheerful equanimity.

Ernest, Michael, Paul and Ann,
Not enough lady, too much man!
But *all* very happy and up-to-date
Their Food of course was Cow & Gate.

Proseptasine—(*M. & B. 125*) p-benzylaminobenzenesulphonamide. Manufactured by Messrs. May and Baker Ltd., London.

It has a powerful anti-streptococcal action; clinical results have shown that it is at least as active as and far less toxic, than any other sulphonamide yet produced. It is not a dyestuff and does not cause side-effects.

Proseptasine is indicated in streptococcal infections of all types. May also be employed prophylactically where there is reason to fear the onset of septic complications. Its efficacy has been proved in cases of erysipelas, puerperal fever, tonsillitis, and complications of measles and scarlet fever.

Supplied in tablets for oral administration. Adult dose: two tablets taken three times a day after meals for three or four days, thereafter two tablets taken twice a day for four or five days.

Children: a proportionately smaller dose should be given, but children can tolerate quite large doses.

Bottles of tablets 25-0.5 gramme.

Dettol.—Manufactured by Messrs. Reckitt & Sons, Ltd., (Pharm. Dept.) Hull.

Important claims have been made for "Dettol," an antiseptic, which is widely used in England. These claims have been confirmed in the past year or two by articles which have appeared in the medical press by eminent medical men. It will be sufficient to mention here, Dr. Leonard Colebrooke of *Queen Charlotte's Hospital, London*, who has demonstrated that when 30% "Dettol" is applied to the skin and allowed to dry, it confers protection against infection by hæmolytic streptococci for a period of at least two hours afterwards. He has also stated that a 2% solution of "Dettol" was found to destroy hæmolytic streptococci and b. coli, even in the presence of pus, within two minutes. This and other findings are given in "*The Journal of Obstetrics and Gynæcology of the British Empire*" (Vol. 40, No. 6, October, 1933). In a more recent paper in the same journal, (Vol. 43, No. 4, August, 1936) Dr. Colebrooke states that since the introduction of "Dettol" into the Hospital in 1933, the incidence of infection due to all grades of hæmolytic streptococci has been reduced by more than 50%, when compared with a similar period immediately prior to the introduction of "Dettol". A significant mention is that since there has been no other change in antiseptic procedure the improvement can fairly be ascribed to 'Dettol".

Apart from its wide use in midwifery, "Dettol" has given excellent results in general surgery, the treatment of wounds, burns, etc.

Briefly, "Dettol" is three times as efficient a germicide as pure carbolic acid when tested against bacillus typhosus according to the Rideal-Walker method. It is non-poisonous, non-staining to linen and skin and is an excellent deodorant. Its combination of properties enables it to be used at really effective strengths on the skin and mucous membranes.

"Dettol" would appear to be an antiseptic which can be confidently relied upon for general surgery use, including skin sterilisation and the treatment of major and minor wounds and burns, for obstetric and gynæcological purposes, and for general recommendation to patients.

"Dettol" is now available throughout India.

CORRESPONDENCE

Lt. Col. M. M. Cruickshank, I.M.S., First Surgeon, General Hospital, Madras, writes to us as follows:—

Ref.:—The article by Dr. K. Sathe, on 'A New Operation for Entropion', the enclosed may interest the author. [*Please see p. 690, Vol. XXXIII, No. 11, Antiseptic—Ed., A.*]

This clamp I found much more useful than a reversed Snellen's entropion forceps, which interferes with work at the extremities of the lid. I should imagine most Ophthalmologists have made use of Webster's technique and found it very satisfactory.

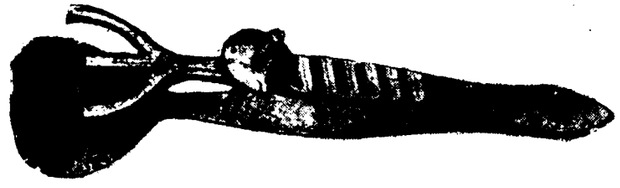
(Enclosure)

A NEW EYELID CLAMP

By

M. M. Cruickshank, Major, I.M.S., *Government Hospital, Madura.*

I devised this clamp to enable me to evert the upper eyelid when performing Webster's operation for entropion. The three



bars bearing teeth are not in a straight line, the centre one being slightly shorter, so that when they are placed beneath the lid, the plate of the clamp being on top, they lie just within the ciliary margin and along the natural curve of the lid.

The clamp, placed in position, is screwed up and the handle brought over the eyebrow. In this way the lid is everted and spread out flat from canthus to canthus.

Though specially devised for Webster's operation, I have found it useful also in performing tarsectomies.

The clamp is manufactured by Messrs. John Weiss & Sons, Oxford Street, London.

Dr. S. B. Surti, F.R.C.S., D.P.H., (IREL.), *Civil Surgeon, Hyderabad writes to us as follows*:

With reference to Mr. M. M. Chakravarty's article that appeared in the Dec. 1936, issue of your Journal on " Lexin in Snake Bite " he says that he has not had success by the inhalation of Lexin and that he has never given Lexin either intramuscularly or intravenously.

I would, through the medium of the same Journal, refer him to the notes that appeared in the Antiseptic of July 1936, on the same drug given intramuscularly and to another article that appeared written by Mr. Md. Ibrahim Miah, L.M.P., in the Indian Medical Journal, Calcutta, July 1933 p. 396 in which intravenous injection was administered in an apparently hopeless case of snake-bite. Under the circumstances, I am afraid Mr. Chakravarty has wasted a good deal of his valuable time in writing notes on cases and disparaging the use of the drug without giving it a fair trial in the proper way.

Messrs. Havero Trading Co. Ltd., Bombay, write to us as follows:—

In the March 1937 issue of " The Antiseptic," there are two papers by the same author, who is referring to " Plasmoquine " and is recommending a dosage which in our opinion is dangerous. On page 377, Dr. S. C. Malik states :

> " The adult dose of Plasmoquine, I generally use is 1/3 gr. T. D. S. or B. D. It should be stopped for 3 to 5 days after using nine tablets altogether.... "

The same statement is again repeated on page 406.

This would mean that the daily dose the author is giving amounts to 1 grain 'Plasmoquine'. We beg leave to point out that this dose was recommended by the makers during the introduction period of 'Plasmoquine,' that is to say, in the years 1927 and 1928, but that subsequent experience proved that this dose for Indian conditions is too high. Investigations particularly at the 'Malaria Treatment Centre' in Kasauli by Lt. Col. Sinton and his co-workers, in the Calcutta School of Tropical Medicine by Lt. Col. Knowles, Col. Chopra and Dr. L. E. Napier as well as by various authors from the Royal Army Medical Corps (Manifold, Jarvis, Dixon, Amy and Boyd, etc.,) proved that in Indian patients 'Plasmoquine' dosage should not exceed ½ grain per day, that is to say, three tablets of 1/6 grain daily. Also that in many instances even 2 tablets of this strength, *i.e.*, 1/3 of a grain per day is sufficient to achieve the three indications of 'Plasmoquine', *viz.*,

(*a*) to reduce considerably the additional amount of quinine necessary in the combat of clinical attacks.

(*b*) to sterilise and to remove gametocytes, and

(*c*) to reduce the relapse rate.

We would be greatly obliged if you would issue this warning in one of your next issues, as we think it a duty to the medical profession to put matters aright.

The following is Dr. S. C. Malik's observations on the above:—

In reply to your letter dated 8th instant with reference to the letter from Messrs. Havero Trading Co., Ltd., Bombay, I like to point you out the following, hoping that my honest opinion will be published along with the letter of Dr. Urchs in your next issue.

In the March 1937 issue of the Antiseptic on pages 376 and 377, I have stated sufficient warning and definite precautions were taken in using Plasmoquine. It has been said there: " It has got few drawbacks, it produces Methæmoglobinaemia and consequent cyanosis. It may also produce gastric irritation from abdominal pain to diarrhœa and dysentery. But all these toxic manifestations can be avoided if it is used in therapeutic doses; Sodi Bicarb and Adrenalin are used from the onset. Its use should be withheld with the toxic manifestations. The tablets should always be taken after meals. It should be stopped for 3 to 5 days after using nine tablets altogether".

In my series, in majority of cases, the total quantity of Plasmoquine I have generally used is 3 to 4½ gr. and it has

been stopped after using 3 gr. (p. 377). Plasmoquine was prescribed to patients under special conditions, all of them being victims to malignant malaria and suffering from hæmolytic and other pernicious types of malaria. The above dosage was not used for ordinary patients indulging in ordinary avocations of life nor for mass treatment.

(1) They were all in bed.

(2) Plenty of fluids were given to them

(3) Liquid, soothing, nourishing diets were given.

(4) Sufficient quantity of Alkalies specially Sodi Bicarb was given to them to increase the alkalinity of Blood and urine and to keep the urine free.

(5) Heart stimulants were given—Glucose and Adrenalin specially were used from the onset.

(6) There was definite interruption in each case after three days' use.

(7) They were given after food, to avoid gastric disturbance, and last of all they were all under my direct supervision.

I commenced using Plasmoquine in Hæmolytic and other pernicious types of malaria since 1928 in the dosage as then advocated by the manufacturers. All my cases responded very well and in none of them, the dosage prescribed under above strict conditions seemed to me dangerous nor too toxic.

However, in confirmation of my statement, the following can be cited :—

I. Malaria Treatment centre, Kausali. Results with plasmoquine.

Abstract from an article by Major S. Smith, R.A.M.C., Journal of R. A. M. C., Vol. 53 No. 3 (1929) September, pp. 2 and 3 :—

" In a series of 16 cases (early 1928) Plasmoquine 0.06 g. (approx. gr. 1) Quinine Sulph 20 gr. (1.3 g.) was given. But as the dosage was not very well tolerated (gastric symptoms and cyanosis developed in some of the patients) further trials were undertaken in the smaller dosage of Plasmoquine 0.04 g. (approx. gr. 2/3) plus Quinine sulph 20 gr. (1. 3 g.) daily.

The course was 0.02 g. (approx gr. 1/3) ' Plasmoquine plus quinine 10 grains (0.65 g) T. D. S. for 21 days.

N. B.—The author has used the drug for 27 days altogether without interruption. He used 21 gr. Plasmoquine along with 210 gr. of quinine sulph in 21 days. He never said the dose was dangerous but only mentioned that ' the dose is not *well* tolerated ' and this is probably due to (1) Prolonged use (2) no interruption: (3)heavy dose of quinine sulph along with it; (4) About 21 gr. of Plasmoquine altogether; (5) and patient not in bed.

The author points out that abdominal pain is not always necessarily a symptom of Plasmoquine intolerance. A case complaining of generalised abdominal pain proved to be suffering from a B. Flexner infection, as well as malaria. In a case of mine it was found to be of amœbic origin and cured with Emetine. (p. 405. Antiseptic, March 1937.)

II. A report of six hundred cases of Malaria.—Treated with Plasmoquine and Quinine by Major H. B. F. Dixon, M.C., R.A.M.C. *Journal of the Royal Army, Medical Corps.*

June 1933, Vol. 60, No. 6, Abstract p. 4 ".....Constipation favoured Cyanosis ".

" Abdominal pain was admitted to in a few cases when questioned regarding it. Tachycardia occurred in six cases but it was found that all had been indulging in too violent exercise ".

" Two cases of accidental over-dosage occurred in 1928. They showed marked cyanosis, but did not complain until the fourth day, when one case suffered incessant vomiting with gastric pain, a transient attack of nephritis and jaundice. Recovery followed.

III. On the Action of Small doses of Plasmoquine in Malaria :—

" In the ' Genuskundig Tijd Schrift Voor Nederl, Indie' 1929. pp. 79/80 there is a report by Dr. Strant, Delpi, Sumatra) on the determination of the splenic and parasitic index etc. p. 1. " The patients at first received 1 gr. (gr. 15) of quinine every day for five weeks. This was followed by a course of 1 g. (gr. 15) quinine and 20 mg. (gr. 1/3). Plasmoquine every day for 14 days. An interval of 5 days was then intercalated and finally 1 g. (gr. 15) quinine plus 40 mg. (gr. 2/3) Plasmoquine per diem was given for five days more.

Here the author gave 3½ gr. in 5 days after the interval period.

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By effects:

(1) *Cyanosis*—Prolonged uninterrupted administration of high doses af Plasmoquine may occasionally lead to cyanotic discoloration on the lips, tongue etc.

(2) *Abdominal pains*—These occur occasionally on the 4th or 5th day of treatment localised in the stomach region, and in graver stages are accompanied by nausea, vomiting and headache. To avoid this, 'Plasmoquine' preparations, should be given after meals and with plenty of fluids.

In conclusion, I like to say that I have stated the result of my humble experience in my original articles. The drug was used with all necessary precautions as already stated and under my direct supervision. The result was satisfactory and the dose I prescribed was found to be not too toxic nor dangerous. However, if the manufacturers advocate the smaller doses, I have got nothing to add. But it should be clearly pointed out that it is the experience of clinicians alone which determines the actual beneficial dose of a particular drug, in a particular case, as it is evident from the universally used familiar drug, digitalis. Experienced physicians and cardiologists alone can determine the actual dose of Tr. Digitalis that is required to digitalise the heart in particular group of cases and that is much bigger than 5 to 15 minims dose advocated by B. P. and it is not also a non-toxic drug.

However, the dose Dr. Urchs referred to as under the investigations of learned malariologists and others, I think, is meant for the mass treatment and simple cases of malaria, indulging in exercise and doing ordinary business of daily life.

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ORIGINAL ARTICLES

Injection Therapy*

BY

A. Narayana Menon, M.B. B.S.,

Honorary Venereologist, Govt. Hd. Qr. Hospital, Madura

My object in reading this paper this evening is only to defend the cause of this type of therapy, to induce you all to adopt this therapy more widely in your practice and to serve as a plea for the development of this art of injection or needle therapy. The credit for the discovery of the administration of drugs through the needle under the skin goes to Alexander Wood of Edinburgh, who discovered it in the year 1853. It was the epoch-making discovery by that great man, Prof. Ehrlich, of Salvarsan and Neo-salvarsan that popularised the use of the needle in the treatment of diseases. The hypodermic syringe has become one of our important weapons not only in the fight against the microbes of various diseases like syphilis, but also in the administration of important products like Insulin, Ephedralin and Liver-extract for the relief of conditions like diabetes, asthma and pernicious anæmia. The use of the needle has also revolutionised the art of anaesthesia. You will all agree with me when I say that spinal and local anaesthesia have almost replaced the administration of general

* A paper read before the Annual meeting of the Madura Medical Association in 1937, and specially sent to the 'Antiseptic' for publication.

anaesthetics like ether and chloroform in many hospitals: and that the recently introduced Evipan anæsthesia is a great favourite with many surgeons especially in cases where a short anæsthesia is needed. Moreover, the needle has become the envy of the practitioners of other systems of medicine. I have had occasions to learn from my patients, during the course of my practice for the last twelve years in Madura of the mischievous propaganda of quacks and barber surgeons in dissuading patients from taking to injection therapy. According to quacks, if injections are resorted to in the treatment of V. D, their crude remedies containing Hg. and As.given by the mouth cease to have any effect on the disease. It is not my purpose within the short time allotted to me to deal with this therapy in all its aspects. Any number of books have been written on the subject and I only attempt to give a short review of the various types of needle therapy so that your memory may be refreshed.

Endermic or Intracutaneous injection.—It is the introduction of material into the tissue of the skin. This method is used for local effect in the skin, and for obtaining skin reaction as in Fei's Test. This test is employed in the diagnosis of Lymphogranuloma or the so-called Sixth Venereal Disease. The antigen used is a saline solution of pus sterile to bacteria aspirated from the climatic bubo. 0.1 c.c. of this is injected intracutaneously and an inflammatory area at least ½ cm. in diameter with a small central zone of necrosis after forty-eight hours constitutes a positive reaction. Soft chancre gives negative results.

Absorption after endermic injection is slower than after any of the other injection methods. Still some vaccines are specially prepared for intra-dermal administration. For example, "Gonodrem" of Parke, Davis & Co., a filtrate from the Gonococcus grown in a special medium containing a solution of extra-cellular toxin, is meant for intra-dermal injection. It is a valuable therapeutic agent in the treatment of both acute and chronic gonorrhoea, dose being 0.05 to 0. 1c.c. For this injection, a special syringe like the tuberculin syringe, is required. The needle is introduced with the bevel side up into and not through the skin until the bevel has been passed completely.

Subcutaneous Injection.—In this the material is injected into the loose areolar tissue beneath the skin. The absorption takes place through the capillaries from the lymph stream. In cases of great depression of the circulation and in lymph stagnation, the absorption is slow and therefore, in heart failure, shock, collapse or extreme pain, intravenous injection is to be preferred.

Hypodermic injections are given, when the medicine cannot be swallowed, when great rapidity of action is required as in pain, haemorrhage or poisoning, or when the substance is rendered useless by digestive juices. The solution for hypodermic injection should be perfectly clean, nearly neutral in reaction, and isotonic with serum. The substance must be soluble in water or in some reasonably bland fluid as saponifiable oil or fat. The bulk of the solution should not be great, as the average capacity of the hypodermic syringe is only 2 c.c. These injections are given on the outer surface of the arm, while the thigh is the most convenient place for self-administration of hypodermic injection. The dangers of hypodermic injection are injection into a vein and infection, both of which can be avoided by proper care and asepsis.

Subcutaneous infusion.—(Hypodermoclysis): In this, large quantities of fluid are introduced into the subcutaneous tissue. This requires a larger needle, a larger apparatus (an irrigator sterilised) and 3 ft. rubber tubing. Usually 500 to 1200 c.c. is infused during one injection and the injection is best given near the outer border of the pectoral muscles midway between the nipple and the head of the humerus. In the case of females, the injections are given into the sub-mammary tissue.

Intramuscular Injection.—In this, the material is deposited into muscular tissue or between layers of muscles. It has the advantage of more rapid absorption and less liability than after hypodermic injections to abscess formation or necrosis from the irritant material because of great vascularity. It has also the disadvantage of great liability of an accidental intravenous injection. This is the method of choice for the administration of diphtheria and tetanus antitoxin to secure prompt absorption and of insoluble bismuth preparations. For absorption after I. M. injection, the question of solubility of the material is of great importance. The drug, although not water soluble, must be atleast tissue fluid soluble *e.g.* Bismuth salicylate and Bis. Oxychloride. The essential points by which I M. injections differ from the subcutaneous injections are the use of a longer needle (1½ to 2½" according to the thickness of the subcutaneous tissue) so as to reach the muscle layer and a stronger needle 22 gauge so as to lessen the danger of the needle being broken off while in the tissue. The site of election in ambulatory patients is the buttock: injection is given in the upper and outer quadrant of the gluteal region. It is always necessary to aspirate for atleast 10 seconds before injection is made to make sure that the point of the needle is not in a vein. For bed patients and children, the outer surface

of the thigh is advocated and the material is injected into and below the vastus externus muscle.

Intravenous injection.—In this 10 to 20 c.c. of a fluid material is injected into the vein by means of a syringe. When larger quantities are injected, the term infusion is applied and the process is carried on by means of a "gravity apparatus".

Technic.—Intravenous injections form one of the most important and useful forms of injection therapy and it is worthwhile to learn the technic thoroughly. The median cephalic vein at the bend of the elbow is the vessel of choice. If this is not available, the median basilic or any vein on the dorsum of the hand or foot or the external jugular vein may be chosen. In infants, the longitudinal sinus may be the only vein that can be punctured. The vein may be made prominent by compression above the site of the injection : the elbow and fore-arm must rest on a firm support. It is preferable though not absolutely necessary that the patient be recumbent. For disinfection of the skin, alcohol is preferred to Tr. of iodine, as the skin is not discoloured by spirit after a preliminary washing with soap and water. In my experience, a sidenozzle 10 c.c. all glass syringe is the most useful syringe for intravenous use. It should be fitted with a 1½" 20 gauge needle preferably tempered with gold or platinum : the bevel of the needle point should be medium and straight. If the vein is very small, or quite mobile or the skin tough, a smaller steel needle should be employed from ½ to 1" long, and 22 to 24 gauge. The sharpness of the needle is of great importance as the success of the vein puncture depends a great deal upon the quality of the needle. The vein should be studied by downward pressure of the fingers of the left hand, the syringe is held between the palmar surface of the fingers and thumb of the right hand and the vein punctured laterally. The needle is forced through the skin with a lifting motion and then directed towards the vein, when a sudden cessation of resistance and appearance of a thin stream of blood in the syringe indicate that the vein has been entered. Care should be taken not to pierce and transfix the distal wall of the vein as well. As soon as the needle has entered the vein, it is gently pushed ⅓ its length so that the needle lies horizontally in line with the long axis of the vein. The piston of the syringe is now pulled on to make sure by aspiration of the blood that the syringe is inside the vein. The injection is made as slowly as possible not more than 1 c.c. per minute. The constriction is of course removed before the injection is begun. To avoid escape around the vein of a few drops of the irritant fluid, it is advisable

to aspirate a little blood into the syringe before withdrawing the needle. Similarly, paravenous injection from inadvertant pressure on the piston. While the needle is being introduced, it is advisable to draw a little sterile distilled water or saline into the syringe before puncturing the skin. In spite of these precautions, should paravenous injection occur, further injection of the medicine should cease at once and the piston be pulled on to aspirate as much of the fluid around the vein as is possible. Then while the needle is in place, a small quantity of sterile saline should be injected so that necrosis may be prevented. Application of cold compress is also of value, when accidents happen. After the injection, pressure is exerted on the point of puncture for a few minutes. Sealing the puncture with collodion is not required. It is well to have the patient in the reclining position for an hour after a vein injection, if possible in the vicinity of the doctor.

Technic of sinus puncture—The sup. long. sinus is entered at the posterior angle of the anterior fontanel, as here the sinus is wide and deep. The bevel of the needle No. 26 must be short 2 mm. and the needle is entered at an angle of 50. with the plane of the anterior angle. It is inserted just in the centre with the point directed backwards. The moment the pericranium is punctured, there is cessation of resistance and blood should enter the syringe if the piston is pulled on, as the sinus lies immediately below the pericranium.

Vein Infusion.—For this we require a graduated glass receptacle or a barrel of 20 c.c. glass syringe or a glass funnel in an emergency, a 1½ yard piece of rubber tubing, a needle and a connecting piece or adopter. A "drop visualiser" is an essential part of the equipment to prevent what is called a speed-shock. In cases of arsenophenamine and alkaline solutions, the new rubber tubing should not be used, as these solutions acquire a toxic factor from the tubing. The new rubber tubing should be soaked in normal NaOH solution for a period of 6 hours.

As needle is not satisfactory for prolonged vein infusion, exposure of the vein and insertion of a cannula is advocated. By means of this technic we may administer about 3 c.c. of fluid per minute or approximately 180 c.c. per hour. It is not advisable to exceed 70 c.c. per kilogram of body weight in 24 hours. The rate of flow should be still slower than 3 c.c. per minute, when the heart's action is enfeebled, and the total amount should not exceed 500 c.c. It is advisable to stop the infusion, if the condition of the pulse and general condition have improved and when a moderate amelioration has been attained. Solution : This should

be as nearly isotonic with the blood as possible. Solutions must be made of distilled water sterilised just before use to avoid toxic reaction from bacterial contamination. All solutions should conform to the normal reaction of the blood which is slightly alkaline. Ions of the salts used may display an entirely different effect when injected intravenously as when given orally. While it makes little difference whether we give sodium or potassium salt by mouth. Potassium salt is a neuro-muscular depressant when given intravenously, while the sodium salt is relatively harmless. Calcium which is practically harmless by mouth, is liable to be toxic when injected intravenously. Magnesium ions when given intravenously depress the nervous system to such an extent that vein infusion of mag. sulph. 10% soln. in quantities from 10 to 20 c.c. has been used with some success as an antispasmodic in tetanus and eclampsia. Intravenous infusion of suspension and even colloid solutions may cause violent reaction and even death. Emulsoid colloids as agar, accacia and gelatin are likely to cause profund blood changes, violent symptoms and death. While the danger of air embolism is grossly exaggerrated, the danger from oil embolism is real. The temperature of the solution should be a few degrees above that of normal blood—at about 105°F. Even the quality of the ampoules in which these solutions are preserved is important. Thus ouabain or strophanthin solution kept in soft glass may become completely inert. They should be kept in hard glass ampoules.

Intracardiac Injections.—These injections are resorted to occasionally because of the fact that the heart is "first to move and last to die". The chief remedy for intracardiac injection is a solution of adrenalin in a dose of 1 c.c. The puncture is made in the 4th or 5th interspace just to the left of the sternum. A thin long needle (*i.e.* 3½ to 4 " long) is used, its point being turned towards the midline, as it is pushed through the heart, Recently intra-auricular rather than intra-ventricular injection has been advocated, as there is no danger of auricular fibrillation inthis. A 4 " curved needle is inserted in the 4th. Inter-costal space as close to the right sternal border as possible, the point being directed downwards and to the midline.

Intraperitoneal Injection.—These injections are resorted to in children, where intravenous injection is difficult and hypodermoclysis is resented by children. But this is contra-indicated in pathological conditions of the abdominal cavity and its contents in tympanites and as well as before and after laparotomies. A small cut is made with a scalpel and a completely dull needle

(size 21, and 21½ " long) is introduced in an upward direction through the abdominal wall a little below the umbilicus and to the left. The bladder must be emptied before this procedure: as the needle has passed into the peritoneal cavity, depression of the staff of the needle lifts the point and protects the intestines from possible injury.

Warm normal saline with 5% glucose in quantities of 200 to 250 c.c. in small children and 300 to 400 c.c. in older children may be given every 12 hours intra-peritoneally. Intra-peritoneal injection of cholera serum, in cases of cholera, has recently been advocated. 70 to 80 c.c. of the serum prepared by Dr. Gosh (Standard Pharmaceutical Works, Calcutta) is diluted with 200 c.c. of normal saline so that it can spread all over the peritoneal cavity. A preliminary subcutaneous or intravenous saline may be necessary to improve the circulation in order to permit the absorption of the serum. Intra-peritoneal blood transfusion may be of life-saving importance in infants and young children with small inaccessible veins and in cases where injection into Sup. Long. Sinus is impossible or undesirable. A special advantage in this method is that 20 to 30 c.c. (small amounts) can be given repeatedly and overloading of the circulation is avoided. A preliminary matching of bloods is of course necessary. Defibrinated and citrated bloods can both be given with advantage. This form of Infusion is useful in selected cases of sick infants—Haemorrhagic diseases of the new born, anaemia, prematurity, acidosis and exhausting diseases.

Subarachnoid Injections.—This is also known as subdural or intrathecal injections, where the material is introduced into the cerebrospinal fluid or the space occupied by it. The different forms of subarachnoid injections are (1) Lumbar puncture, (2) Cistern injection and Ventricle injection. Needless to say, in all these, strict asepsis must be practised, as failure in this respect may lead to meningitis and death. These injections are resorted to for the diagnosis and intelligent treatment of neurological conditions like cerebral syphilis, pneumococcal and cerebro-spinal meningitis. Sub-arachnoid anaesthesia is one of the safest and most useful forms of anaesthesia in experienced hands.

As the nervous system is highly sensitive, it is highly important to maintain the normal pressure conditions and composition of the C. S. F. The fluid introduced in these injections should not only be isotonic but also as nearly iso-ionic as possible. Pneumococcus meningitis is said to be amenable to subarachnoid injection of 0.05 gm. of ethyl-hydrocuprin (optochin)

in 10 c.c. distilled water subthecally by lumbar puncture. Arsphenamised serum is advocated in cerebral syphilis. The serum is best secured one hour after a dose of .6 gm. of neo-arsphenamine has been given intravenously. The blood is withdrawn, the serum collected and diluted with sterile physiologic salt solution. It is heated at 56°c. for half an hour and the injection is done slowly.

As anti-meningococcal serum is anti-bactericidal in its action and must come in contact with the organisms to display its efficiency, the subarachnoid injection at the earliest possible moment in epidemic cerebro-spinal meningitis must be considered obligatory and it has reduced the mortality of the disease. The antisers are preferably, though not necessarily diluted with an equal amount of sterile distilled water to make them more nearly approximate the C. S. F. in composition.

Lumbar Injection.—The needle must be from 3 to 3½" long and should be provided with a removable stilette. The caliber of the needle should be as small as possible, so that the tear in the meninges will be small, the leakage of the C. S. F. will be less and thereby the puncture headache will be less. Puncture headache is always due to excessive leakage of the C. S. F. Hence it is always important to keep the patient at rest while the needle is in the dural sac. The patient may be seated with his body well curved forward so as to widen the inter-vertebral spaces as much as possible or he may lie down on his side with his knees drawn up and the body arched forward. The point of puncture is the space between the 2nd and 3rd. vertebrae and Jacoby's rule is the best guide in making out the space. "The line connecting the highest points of the Iliac crests cuts the spinous process of the 4th Lumbar vertebrae. The skin is sterilised with Tr. of Iodine and is washed off with alcohol. The skin over the puncture may be anaesthetised by a few drops of 1 % novocaine. The lumbar needle is gripped firmly and inserted exactly in the median line, straight forward and vertical to the skin. The thrust should be sufficiently vigorous to push the needle thro' the skin and muscle into the spinous ligament: it should then be inserted more slowly and deliberately until a sudden cessation of resistance indicates that the canal has been entered. The stilette is now withdrawn and the appearance of the fluid is the sign that the sub-arachnoid space has been actually reached. After as much or more of the fluid than the amount to be injected has been removed, the fluid to be administered, previously warmed to the body temperature is permitted to run in slowly—1 c.c. per minute. The blood pressure should be watched during the injection and a sudden drop of

about 20 mm. of Hg., should be taken as an indication to stop the procedure or at least to proceed with the greatest possible caution. After completion of the injection, the needle is drawn quickly and the wound covered with sterile gauze and adhesive plaster. To avoid liability to puncture headache, it is best to have the patient as long as possible, lie on the abdomen with the head kept lower than the pelvis by raising the foot of the bed with a brick. In cases of arteriosclerosis, high B. P., brain tumour or cerebral concussion, it is well to advise a day's rest in bed. It is well to give phenobarbitol in .05 gm. dose after the puncture.

Cistern Puncture.—Under ordinary circumstances there is not much movement of C. S. F. from one locus to another. In order to reach the brain—the ventricles excepted—the point of election for the introduction of the serum is though Cistern puncture. As in all probability, the cerebral rather than the spinal meninges are the earliest affected in meningitis, anti-meningococcal serum is most efficient when given by the cistern route. Likewise in view of the predilection of the syphilitic infection for attacking the basal structures, cistern injection of arsphenamised serum ought to have more direct access to the affected part than the lumbar injection. The cistern puncture denotes the introduction of the needle into the Cisterna Magna, situated between the medulla and the cerebellum. Many prefer this to lumbar puncture even for diagnostic purposes: because it is easier for the operator, less disagreeable to the patient during its performance and practically free from the undesirable after-effects. Hospitalisation is not required nor desirable. The absence of after-effects is due to the negative pressure normally found on cistern puncture in the sitting patient, so that after-leakage is not likely to occur, provided the patient is kept sitting for sometime after the puncture. Roentgenoscopy after the cistern injection of iodised oil is said to be more valuable in differential diagnosis than lumbar injection. The procedure is of course carried out under rigid precaution of asepsis. The instrument used is the Spiegal needle which is made in two lengths 6 c.m. and 8 c.m. and is provided with a pad for the index and middle fingers. This is an excellent instrument for lumbar puncture also. The successive steps in the technic are: (1) proper position of the patient—the patient is placed on either side, the head flexed so as to extend the occipito-atlantal ligament, and supported by a small hard pillow or sand-bag. It is not advisable to have a local anaesthetic, as the landmarks are thereby obliterated. (2) Location of

the Atlas by palpating downwards from the occipital protuberance to the deepest depression at the base of occiput. (3) Palpation of the axis. (4) Insertion of the needle about .5 c.m. above the axis, directing it towards the end of the eye-brow. (5) Location of the point of orientation—pushing in the needle upwards and forwards until the posterior edge of the foramen magnum is reached—the most important part in the technic. (6) Perforation of the atlanto-occipital membrane. Finally the importance of steering the needle in the median plane should be emphasised—so that important nerves and vessels may be avoided. After touching the occiput, it is still necessary to steer the needle from .5 to 1.5 c.c. before penetrating the dura. The spinal fluid flows spontaneously as the dura is pierced, when the patient is in the side position. The contra-indication as in lumbar puncture, is increased intracranial pressure in which the brain stem is forced down into the foramen magnum, partially obliterating the cistern. This condition would be indicated by the presence of a choked disk: hence the importance of examining the eyes in doubtful cases. At both extremes of life, it is inadvisable to perform cistern puncture: in childhood—because lumbar puncture is fairly easy and free from ill effects: in old patients—because arteriosclerosis with its tortuous vessels add to the danger of injury and haemorrhage. This procedure is sometimes rendered difficult or impossible by pathological process and deformities in the region of the neck, particularly, scars left behind by a large furuncle constitutes a formidable obstacle to the passage of the needle.

Ventricle injection does not come within the province of the general practitioner, as it requires hospitalisation and trephining of the skull.

Injection treatment of varicose veins and piles.—Before I close I wish to say a word about these injections. This treatment has come into prominence lately, which can be easily carried out by the general practitioner, as this treatment is ambulatory. Quinine and urethane solution is the one that is recommended for the treatment of varicose veins. The same solution can be used in the treatment of haemorrhoids: but a 5% solution of carbolic acid in almond oil, which can be obtained in the form of ampoules, is the one that is highly advocated. The injection treatment of piles is suitable only in the early uncomplicated cases where slight bleeding is the only symptom. A thorough local examination must be carried out; and the treatment requires certain amount of patience, skill and experience.

A suitable speculam, a graduated syringe, a suitable needle

5½" long with wide bore as far as the terminal portion, a pair of Spencer Wells forceps, a few cotton swabs and a suitable antiseptic jelley or lubricant (K. Y. Jelley) are needed. If the patient is in the habit of taking liquid paraffin, it is stopped for a couple of days before the injection; it is best that the bowels move naturally. A preliminary to the treatment is the anaesthetisation of the fissure with 2 % pantocaine solution. The knee and elbow position is the most satisfactory; the left lateral position with a small pillow under the left hip is always used for women and the usual position when experience has been gained. The proctoscope is introduced and moved slowly in and out until ano-rectal ring (white line) can be seen in the lumen. The rectum is cleaned well with a swab and a swab is introduced high up to prevent any faeces coming down. The correct site for the injection is just above the ring *i.e.* into the highest part of the internal haemorrhoidal plexus, *i.e.*, just above the piles. Thus the first ring of injection is given above the piles, the subsequent injection over the middle of the piles or over the lower part but never lower than a ½" above the white line. A guard is arranged to expose ½ cm. of the needle. All air is expelled from the syringe and the needle is pushed through the mucous-membrane by a sharp quick movement and is changed after each injection. The injections are given at weekly intervals. First, 2 c.c. to the anterior pile; second, 2 c.c. to each right and left pile; third, 2½ c.c. to each anterior and posterior; fourth, 3 c.c. to each right anterior and left posterior; fifth, 3 c.c. each to left anterior and right posterior. The mucous membrane must be kept under observation, while the injection is given slowly at the first appearance of whitening or blanching, the injection is stopped no matter how little has been given. Whitening is due to giving the injection into the mucous membrane instead of deep into it. If there are no symptoms the patient returns in 2 or 3 weeks and a final injection is given, 2 c.c. anterior, 2 c.c. posterior and 2 c.c. to the left posterior, as these are the commonest sites of piles.

Diet*

BY

Dr. Raja Ram M.R.C.S., (Eng.), L.R.C.P., (Lond), P.C.M.S.,

I/C. Civil Hospital Shahpur Saddar (Pb.) and Superintendent, Camp Jail Shahpur.

THE subject as I feel myself is a dry one and moreover there is nothing original in it. I have collected a few facts after a long experience which might help the busy practitioner for easy reference. The problem of diet has attracted the attention of the civilised world and every now and then new facts are brought to light. You might find books on European diet but there is none to my satisfaction on Indian dietary. I therefore take the liberty to discuss a few facts about Indian dietary which might help us all in prescribing in health as well as in various diseases.

We all know that there are six types of diet, *viz.* :—

1. Protein.
2. Fat.
3. Carbohydrates.
4. Minerals.
5. Vitamins.
6. Water.

These articles are required in a certain proportion to build up healthy body both physically, mentally and spiritually. The human engine requires food to produce heat, energy and building of the tissues and also to repair the body of its wear and tear. It is not out of place if we discuss briefly at this stage how the food is digested.

1. *Protein.*—It is digested by the process of hydrolysis mostly in the stomach by gastric secretion and partly by the pancreatic and intestinal secretions in the intestine. By the digestive process it changes into acid metaproteins. and proteoses in the stomach and peptones, polypeptides and amino acids in the intestines.

The protein is required for building the body and to compensate the wear and tear. Its accessory portion is eliminated by the urinary system. There is no store-house for it in the body.

* A paper read at the District Medical Association, Sargodha (Shahpur), and specially sent to the 'Antiseptic' for publication.

2. *Fat.*—The fat is assimilated in the intestines by the process of saponification and emulsification. It is needed for the production of heat and energy, whilst its accessory portion is deposited in Fat depots.

3. *Carbohydrates* are digested by ptylin ferment of the saliva, in the stomach and by the intestinal and pancreatic secretions in the intestines.

The Carbohydrate is needed for the production of heat and energy which is done by the process of oxidation. Its accessory portion is deposited in the liver and muscles in the form of glycogen.

The other food factors do not require much digestion but are the most essential parts of the food as will be described later.

4. *Minerals.*—All the secretions and excretions of the body contain different minerals. So the minerals are needed to keep up the mineral balance of the body.

5. *Vitamins.*—Just as the cement and nails are needed to keep the earthy buildings intact, similarly the vitamins are required for the healthy up-keep of the human buildings. As we are all familiar with them, I need not indulge in their detail.

6. *Water.*—Water is most essential for keeping the water balance of the body. It helps in flushing the system and eliminating the poisons.

We have briefly discussed the varieties of food, the process of digestion and their utility, but it remains to be settled how much food and in what form a healthy man should eat. It is also to be settled how the food is to be prescribed to the patients suffering from various diseases. It is not an easy question unless we all put our heads together to come to some conclusion. The food specialists go according to the caloric value of the food and basal metabolism of the body.

According to Rankan the basal metabolism is said to be about 1700 caloric value. A man doing ordinary work needs about 1300 caloric value of food more than his basal metabolism. The athletes even require food of 200 caloric value more than ordinary man.

If we avoid fractions for easy remembrance, the caloric value of protein is said to be 4, fat = 9 and carbohydrate = 4.

According to this data we require :—

(*a*) Protein : 100 gram × 4=400 calories.

(*b*) Fat : 100 gram. × 9=900 calories.

(*c*) Carbohydrate : 300 gram. × 4=1200 calories.

The total caloric value of this comes to about 3000. The next question arises in what form the protein, fat and carbohydrates may be taken. Before we proceed further I would like to say that there are two groups of the proteins :

(*a*) Animal protein : *e.g.*, meat, eggs, milk, cheese, and fish etc.

(*b*) Plant protein : *e.g.*, cereals.

Undoubtedly the animal proteins are superior to the plant ones on account of their higher biological value. Meat has an extra property described as Dynamic *i.e.* it produces a sort of stimulus to the whole system.

By further investigations we have come to the conclusion that :

(*a*)	One chk. of	*meat*	contains	16	grms. of	protein	*i.e.*, appr.	$\frac{1}{4}$th	of it is protein.
(*b*)	do.	*fish*	do.	12	do.	do.	do.	$\frac{1}{4}$th	do.
(*c*)	do.	*eggs*	do.	6	do.	do.	do.	$\frac{1}{8}$th	do.
(*d*)	do.	*milk*	do.	2	do.	do.	do.	$\frac{1}{32}$th	do.
(*e*)	do.	*bread*	do.	6	do.	do.	do.	$\frac{1}{16}$th	do.
(*f*)	do.	*cereals* (*peas and bread*)	do.	4	do.	do.	do.	$\frac{1}{11}$th	do.
(*g*)	do.	*oat meal*	do.	10	do.	do.	do.	$\frac{1}{7}$th	do.

From the above table the menu can easily be prepared with due regard to the caloric value of the food.

Dhar suggests the following diet for generating the requisite amount of calories 3400.

(1) One seer of carbohydrate in the form of rice, potatoes, chappaties, sugar and sweets etc. This will generate approximately 2000 calories.

(2) $1\frac{1}{2}$ chhitak of fatty acids in the form of butter and ghee. This will generate about 500 calories.

(3) (*a*) Two chhitaks of protein matter in the form of Dhal.
(*b*) 12 chhitanks of milk.
(*c*) Two eggs.

These will generate approximately about 500 calories.

All these will give 3000 calories. For the rest, fresh fruits and leafy green vegetables are required not only to make up the calories but provide vitamins and minerals. Eggs not only contain good quantity of protein but are rich in vitamins A and B which are so essential for growth and for increasing stamina and resistance to disease and for avoiding beri beri.

The growing children require more eggs and milk than usual. Green vegetables and fresh fruits are also essential. Their selection of course depends upon one's pocket.

The Table No. 152 of the Medical Research Council Report shows how many calories we need according to the age. The table runs as follows :—

A child of	0—1	year needs	600	Calories.
do.	1—2	do.	900	do.
do.	2—3	do.	1200	do.
do.	3—6	do.	1500	do.
do.	6—8	do.	1800	do.
do.	8—10	do.	2100	do.
do.	10—12	do.	2400	do.
do.	12—14	do.	2700	do.
A girl		needs	2500	do.
Boy over	14	do.	3000	do.

According to the Medical Research Council Report, an adult requires one gram of protein for every kilogram of body weight, whilst the child requires about 3 to 4 grams which comes to about 100 grams daily.

Before closing this chapter I would like to say that the selection of diet depends upon our power of digestion, assimilation and variety of work indulged in. It also depends upon the climate and to a certain extent on our likes and dislikes. In addition to suitable diet the health depends a great deal upon regular exercise and freedom from worry. The meat is not suitable in summer especially from May to August, the reasons being that it putrifies rapidly. It is eliminated in the form of Urea and Uric acid through the kidneys. On account of excessive perspiration the quantity of urine is lessened and thus there is every liability for the accumulation of these acid products in the system producing harmful results by Ketosis. The most suitable articles of diet in summer are milk, lassi (churned curd), fruits, vegetables, eggs and wheat either in the form of chappaties or dalia and salad etc. There is still plenty to say about diet but I would not like to tax your energies any more. I would however like to say something about diet in various diseases.

1. *Fevers.*—Liquids, eggs, milk, lassi, aerated water, lemon squash, barley water etc.

These are required for the elimination of the Ketabolic products through skin, alimentary system and kidneys.

2. *Cyclical vomiting.*—Liquids as described above and glucose. The latter is required to utilize the ketone bodies. It is equally important in fevers.

3. *Allergic disorders.*—As we all know, allergic disorders means hypersensitiveness of the system to certain proteins manifesting various symptoms affecting different organs of the body. The organs mostly affected are:—

(*a*) The skin exhibiting the symptoms of urticaria, eczema, and dermatitis etc.
(*b*) Stomach in the form of Cyclical Vomitings.
(*c*) Nervous system *e.g.* Neuropathic Oedema.
(*d*) Bronchial tubes exhibiting the symptoms of Asthma etc.

In these disorders we have to prohibit the intake of proteins. In eczema the milk should be given by removing the skin which contains lactalbumin ; similarly in urticaria we have to avoid fish, eggs, oats and chocolates.

4. *Diabetes.*—I have found the following diet useful in diabetes :—

MEAT DIET

Breakfast.—One egg or one cup of milk. One dose Pancrepatine A. F. D.

Midday.—Grilled or roast meat ... 4 oz.
Green vegetables, cooked ... 8 oz.
Potatoes ... 3 oz.
Butter ... 1 oz.
One dose Pancrepatine A. F. D.

Evening Meal.—Same as midday and one dose of Pancrepatine.

VEGETARIAN DIETS

			No. 1.	No. 2.
7 A.M.	Milk	...	8 oz.	12 oz.
	One dose Pancrepatine.			
10-30 A.M.	Wheat Chapaties	...	2 oz.	2 oz.
	Dhal	...	Nil.	1 oz.
	Green Vegetables (Cooked with)	...	8 oz.	8 oz.
	Curled milk	...	4 oz.	4 oz.
	One dose Pancrepatine.			
4 P.M.	Milk	...	8 oz.	12 oz.
	One dose Pancrepatine.			

8 P. M. Same as at 10-30 A.M. with one dose of Pancrepatine. Each chapati should be made from 10 oz. of wheat flour. Salt and a little spices may be used according to taste.

Sumsum's formula may also be adopted in fixing the diet for diabetic patients. It is a bit complicated.

The formula is.—Deduct caloric value of the total protein allowed from the total calorium allowance and divide the remainder by 17. The result of this division represents the grams of fat. This figure multiplied by 2 gives grams of carbohydrate.

Thus 3000 caloric diet = 3000 - 400 (100 × 4) = 2600 ÷ 17 = 153 × 2 = 306.

∴ 100 grm. P × 4 = 400.
150 grm. F × 9 = 1377.
306 do. C × 4 = 1224.

3001. up to 3400 Coloric.

Shaffer's formula is simpler. His formula is this :—

Fat is equal to ½ P—X 2 C.

The bread and potatoes are not suitable for a diabetic patient. One has to consider two things in preparing a menu for such patients:

(1) The satisfying nature of the food which depends upon the length it remains in the stomach.
(2) It should be nutritious.

According to this criteria, meat, milk and cooked eggs should be given in great quantity whilst fish, bread and potatoes sparingly. Roughage *i. e.* cellulose holds no good now. Alcohol should be prohibited. The likes and dislikes of the patient should also be favourably considered.

5. *Ketogenetic diet.*—This term is used for that kind of diet which increases the quantity of ketone bodies in the system and thus increases the acidity of the urine. Such diet is useful in the diseases of urinary tract. The general rule is to increase the quantity of fat and decrease the quantity of the carbohydrates. It has also been tried in epilepsy and migraine. The following diet is suggested :

Protein	...	62 grams.
Carbohydrates	...	13 grams.
Fat	...	275 grams.

For this purpose we prescribed:—

(*a*) Atta (wheat flour)	...	8 Chittak.
(*b*) Butter	...	4½ do.
(*c*) Eggs	...	2 do.
(*d*) Meat	...	4 do.
(*e*) Some fruits and vegetables.		

6. *Anti-ketogenetic diet.*—means diet not producing ketone bodies but sufficient amount of protein is given to keep up the nitrogen equilibrium. This is useful in obesity. The diet table is as followes:—

(*a*) Atta (wheat flour)	...	1 Chittak.
(*b*) Lean-meat	...	1½ do.
(*c*) Eggs	...	2 in number.
(*d*) Vegetables	...	4 Chittak.
(*e*) Fruits sufficient quantity.		
(*f*) Tea	...	One cup or two.

7. *Diet for Rheumatic fever.*

8–0 A.M.	Grape fruit pulp with dessert-spoonful of glucose. 5 ch. of glucose lemonade.
10–0 A.M.	5 ch. of skim milk, ¼ ounce of lactose, a slice of toast, honey and weak tea.
12–0 (noon)	Whole citrated milk with lactose flavoured with cocoa and steamed fish.
2–0 P.M.	5 ch. of whole citrated milk.
4–0 P.M.	Tea with milk and sugar, a slice of toast or biscuit with honey.
6–0 P.M.	Milk pudding.
8–0 P.M.	Soup, a toast, butter and food pudding.

8. *Diet for chronic rheumatic arthritis.*

8–0 A.M.	A glass of water.
Breakfast.	A cup of tea or coffee with saccharine without milk, one small chapati. One ch. of meat preferably tongue and fresh fruit.
1–0 P.M.	Tumblerful of water.
Lunch.	2 ch. of meat, some green vegetables, fresh fruit, a cup of tea or coffee without sugar.
5–0 P.M.	A glass of water.
6–0 P.M.	A glass of water.
Dinner.	1 or 2 ch. of meat with a good quantity of fruits of vegetables.
	Salt is to be taken sparingly with a moderate amount of exercise.

9. *Colon Diseases*—Before describing the diet in colon diseases, we would discuss its function. Briefly the function of the colon is absorption of food specially water, excretion of salts and secretion of intestinal juices.

The proteins are putrefied and carbohydrates are fermented by the action of B. coli. The acidity of the contents of large intestine resulting from carbohydrate fermentation favours the growth of B. Acidophillus. Its motor function depends upon gastro-colic reflex. As regards absorption, 90 % of the protein is absorbed in the small intestine except cellulose which are broken down by the intestinal bacteria. Fats are not absorbed in large intestine.

In view of the above facts the diet in colon diseases will be as follows:—

(*a*) *Hypermobility* of colon *e.g.* Acute dysentery etc., nothing but water and fluid diet.

(*b*) *Chronic Cases.*—

Breakfast	Milk, tea and butter.
10–30 A.M.	Milk and rusk.
Lunch.	Fowl, fish and vegetables.
4–0 P.M.	Milk and rusk.
Dinner.	Macaroni, vermicelli and pudding.
Bed time	Milk and rusk.

(*c*) *Constipation.*

7–0 A.M.	Liquid paraffin 1 oz.
8–0 A.M.	Fruit juice, porridge, cream and whole meal bread.
10–30 A.M.	Butter, milk and culture of B. Acidophillus
1–0 P.M.	Fresh fruits and vegetables, specially tomatoes, butter and bread.
4–0 P.M.	Ginger Cake.
7–0 P.M.	Vegetable soup, Sago pudding and Whole meal bread.
Bed time.	Liquid paraffin, milk and fruit.

(*d*) *Diet for excessive carbohydrate fermentation.*

7–30 A.M.	Hot water.
8–0 A.M.	Tea without sugar. 1 or 2 eggs.
11–0 A.M.	A glass of B. Acidophillus, milk, plane biscuits.
1–0 P.M.	Fresh fish, chicken, plane biscuits.
4–30 P.M.	Dahi without sugar and sponge cake.
7–0 P.M.	Fresh fruits and vegetables.

(e) *Diet in intestinal putrefication.*

7–0	A.M.	Water.
8–0	A.M.	Porridge, lentils, milk and sugar.
11–0	A.M.	Biscuits and milk.
1–0	P.M.	Eggs, cheese, biscuits, milk and cream.
4–0	P.M.	Toast and tea.
7–0	P.M.	Vegetable and milk.
10–0	P.M.	Vegetable and milk.

Allergy in Actinomycotic Infection*

BY

Dr. Ram Kumar Goyal, D.Sc., Ph.D., M.R.C.P., etc.,

School of Tropical Medicine, Calcutta.

VON PIRQUET propounded the hypothesis in 1903 that the reaction to tuberculine obtainable in tuberculous subjects was a phenomenon of hypersensitiveness and could be compared to the anaphylactic reaction of subjects sensitised with serum. This hypersensitivity to tuberculine was called allergy by this author. The anaphylactic and allergic reactions constitute two well differentiated types amongst the aseptic inflammatory phenomena. In 1921, Zinsser was the first to differentiate between the local cutaneous anaphylactic response, which was immediate and transitory and the tuberculous type, in which the reaction appeared late and persisted for a long time Laporte has shown that the anaphylactic reactions are characterised by early appearance of vascular necrosis, capillary haemorrhages, marked oedema, relative rarity of inflammatory cells, predominance of poly-nuclears and accumulation of eosinophiles, but granulation tissue makes its appearance finally as in allergy. Mackie and Macarteny have defined allergy as hypersensitiveness to products of infecting organisms, but there is no proof that the split fractions of organisms can induce allergic sensitisation. Boquet and Sandor could sensitise animals with the proteins of Koch's bacillus, but the reactions observed were always anaphylactic in nature. Topley and Wilson have found it almost impossible to define allergy. It is highly desirable to reserve the word allergy to bacterial allergy and to place the sensitivity in asthma, hay-fever etc. in the atopy group. The word allergy cannot be reserved for tuberculous

* Specially contributed to the "Antiseptic".

sensitisation, as the allergic state can be produced not only by acid-fast pathogenic or non-pathogenic organisms, but also by other germs, such as glanders, trichophyton or actinomyces.

It must be borne in mind that an animal or human being reacting to the injection of tuberculine by giving an allergic reaction can be suffering from a trichophytic or actinomycotic infection. Urbain, Potter, and Bretey have adduced proof in favour of this contention. Bretey observed positive intradermal reactions in tuberculous guinea-pigs on injection of streptothricine (actinomyces extract prepared in the same way as tuberculine), but the guinea-pigs infected with actinomyces failed to react to tuberculine. This anomaly could be explained by the fact that Bretey injected 10 to 30 mgm. of actinomyces into guinea-pigs by the intra-peritoneal route and tested them only 6 weeks after the sensitising dose. The ante-allergic period bears an inverse ratio to the virulence of injected organisms. In view of non-virulence or feeble virulence of most of the members of actinomyces group, bigger doses administered over longer periods might sensitise guinea-pigs to tuberculine. We put this idea into practice at the Pasteur Institute, Paris and arrived at the following conclusions:—

The guinea-pigs infected with actinomyces became hypersensitive to the corresponding actinomycotic extract and also to tuberculine. Allergy manifested itself some days or weeks after the sensitising dose. The curve of hypersensitivity rose gradually attaining its maximum height between the 5th and the 8th months, remained stationary for several weeks and then went down gradually between the 7th and the 11th months. The guinea-pigs showed individual differences in their degree of allergy.

We tried to ascertain if the various strains at our disposal could be differentiated by the allergic test on guinea-pigs and came to the conclusion that the different strains behaved in nearly the same way after inoculation.

In the next series of experiments, the tuberculous guinea-pigs were tested both by intradermal injection of tuberculine and extracts of actinomyces. These guinea-pigs reacted, in general, to actinomyces extract but more feebly than to tuberculine.

As regards rabbits, skin is not suitable for the study of local allergic reactions. Paul Bordet reported positive results in case of tuberculous rabbits by intra-dermal injection of tuberculine. But the active principle of tuberculine is contained in glycerine-broth. The positive intradermal reaction obtained by Bordet might have been an anaphylactic reaction due to glycerine-broth and not to the product of tubercle bacilli. We repeated this

work in conjunction with C. Ajo and definitely showed that the intradermal tuberculine reaction could not be elicited in rabbits, the positive findings were due to glycerine-broth alone.

As far as cunjunctiva is concerned, we found in conjunction with C. Ajo that instillation of tuberculine into the conjunctival sac was not a sufficiently sensitive test to be of diagnostic value. We devised a new test by intra-ocular injection of suitable dilutions of tuberculine. Our method was found to be as sensitive as the thermic reaction elicited by intravenous injection of tuberculine. While highly sensitised rabbits can be killed by intravenous administration of tuberculine, our test engenders no such risk. Inoculation of diluted actinomyces extract into the anterior chamber of tuberculous rabbits gave one result positive out of 6, glycerine-broth injected into the opposite eye as a control did not produce any definite reaction. The actinomyces extract proved innocuous to normal rabbits.

It has been definitely demonstrated that a thermic reaction in tuberculous rabbits cannot be elicited by injection of toxins having no relation to tubercle bacilli, whatever reaction is produced is also observable in normal controls. 10 rabbits, which had given a thermic reaction to tuberculine were injected with actinomyces extract, 4 out of 10 had a rise of temperature above 0.8°C. These results led us to the conclusion that the allergic reactions could be elicited not only by injection of the product of organisms sensitising the animal, but also by related allergens.

We confirmed our results by intra-cerebral injections of actinomyces extract into tuberculous guinea-pigs. Neufeld obtained the same results by intracerebral injection of alcoholic precipitate of glycerine-broth as by tuberculine. This conclusion was contrary to our results observed by dermal and ocular tests, so we repeated the experiment with a slightly different technique. We found that low dilutions of glycerine-broth were toxic to the brains of normal guinea-pigs, but 0.2 c.c. of 1/100 dilution was innocuous. The same dilution of actinomyces extract was toxic for tuberculous guinea-pigs but had no effect on normal guinea-pigs.

In order to make our conclusions doubly sure, we injected intradermally dead and dried bacilli instead of the extract. 1 mgm. of dried actinomyces suspended in 0.1 c.c. of saline injected intradermally into tuberculous guinea-pigs produced the same reaction as in normal animals, while the dead tubercle bacilli produced definite necrosis in tuberculous animals only (Koch's phenomenon), when the dose of killed actinomyces was increased to

4 mgm. the intradermal injection of the suspension produced Koch's phenomenon in all the 4 tuberculous guinea-pigs. This experiment showed that the actinomyces were not as toxic as the tubercle bacilli to the tuberculous guinea-pigs; we confirmed this point by resorting to Bail's phenomenon, which is as follows:— 100 mgm. of dead tubercle bacilli injected intra-peritoneally into tuberculous guinea-pigs produce death in about 8 hours, autopsy reveals the presence of a serous exudate in the peritoneum and the pleura. When we employed 100 mgm. of actinomyces in place of tubercle bacilli, no appreciable reaction was observed in 15 tuberculous guinea-pigs. On increasing the dose to 300 mgm. 2 out of 8 guinea-pigs died after 48 hours instead of 8 hours and presented a peritoneal and pleural serous exudate. Two normal guinea-pigs injected as control remained apparently normal. These results authorised us to conclude the relative non-toxicity of actinomyces.

Guinea-pigs sensitised with actinomyces reacted both to the corresponding extract and tuberculine. The various actinomycotic extracts could not be differentiated by the allergic test. Tuberculous guinea-pigs and rabbits reacted in a certain measure to actinomyces extracts. These observations showed that the local allergic manifestations are not strictly specific. The presence of an antigen common to tubercle bacilli and actinomyces is strongly suggested.

OPACITIES

The results so far reported from the use of caritol, a concentrated vitamin A, in cases of corneal and lenticular opacities, are promising, but not quite convincing. However, like any other systemic treatment, it is only expected to be contributory, and the strong probability is that it does contribute to epithelial resistance.

Epidemic Dropsy in its Clinical Aspect*

BY

Kartic Chunder Dutt, L.M.S., M.R.A.S.,

Chief Medical Officer, Sonepure State, India.

EPIDEMIC Dropsy has been observed to attack the rice eating Caucasian races living in India, Burma, Indo-China, and Africa. The predilection appears to be in the following order:— Bengalees, Beharis, Orieyas, Madrasis, Assamese, Ceylonese; Hindoos, Mahomedans, Christians.

The first authenticated report of Epidemic Dropsy, as a distinct disease, was made by McLeod, Chrombie, Davidson, and O'brin, in 1877. 'The first epidemic occurred in 1877—79. The 2nd epidemic in 1901 was recorded by Rogers. The third epidemic occurred in 1907—11. The fourth in 1919. The fifth in 1921—22. Since then, several epidemics have occurred in rapid succession. Now, the disease has become an annual visitor, or, rather endemic. It must be admitted that the aetiology of the disease is still uncertain and the clinical varieties of the disease still not thoroughly within common knowledge.

Well, now that the disease has become a permanent settler in India, and, is doing havoc among the races mentioned above, it is time that a few of the important clinical points of epidemic dropsy should be noted. Moreover, now that sporadic cases are also occurring, it is more difficult to diagnose these, than when the disease occurred only in the epidemic form.

The disease manifests what is called symptoms—complex, affecting more or less the digestive, the circulatory and the nervous systems. Three distinct clinical forms of epidemic dropsy are recognisable; although, inspite of predominance of one group of symptoms in the beginning of the disease, the other groups of symptoms may appear sooner or later in the course of the disease. The clinical picture of the disease may thus differ widely in different cases, and, in the same case during different stages of the disease.

The clinical forms are:—

I. Dry cardiac type.
II. Dropsical type.
III. Gastro-intestinal type.

* Specially contributed to the "Antiseptic".

I. *The Dry cardiac type* of epidemic dropsy forms the smallest group, occurring in one to five per cent of cases in different epidemics; and, fortunately so, because it is the most severe and, fatal type. The dry cardiac is also difficult to diagnose, because, the important and obvious diagnostic feature *viz.*, dropsy is absent. If there are other cases in the family, or in the locality among the associates, then, the diagnosis is easier. Most of the cases of the dry cardiac type are acute. In some cases, death from heart failure has occurred within a few hours of the onset of the disease. The cardiac symptoms, *viz.*, cardiac angina and cardiac dyspnœa, being the first and the last symptoms in these cases, there was no time for the other symptoms to develop. Four such cases occurred in Basti Jail reported by Col. Henderson, and a few cases occurred in Calcutta. In the dry cardiac type, as a rule, dropsy and gastro-intestinal symptoms are absent; but symptoms of pulmo-cardiac neuroses predominate. The group of symptoms mostly observable are tachycardia, cardiac dyspnoea, intense distress, angina of the heart, a feeling that the heart is being punched with tongs, an apprehension of impending death. These symptoms appear in paroxysms. The onset of the paroxysms suddenly ushers in at about 9 P.M. The patient has to sit in bed with a pillow at her chest for the whole night. In the morning, there is a remission of the symptoms till 9 P.M. When all on a sudden, another paroxysm of cardiac symptoms comes on again. On auscultation, the 1st sound is powerful, and, the 2nd sound sharp. The pause is diminished. The heart is running like a race horse in full speed. On palpation powerful heart beats are felt, and, there is a throb in the praecordial region. In long standing cases, a bruit may appear, the bruit generally soft and pre-systolic. The paroxysms continue night after night. The patient suffers from cardiac distress, and, sleeplessness. These produce anorexia and emaciation. The fat and muscles dry up. The skin becomes dry and rough, and may peel off in flakes. There is black discoloration of the skin.

The duration of this disease is from a few days up to six months, while, the two other types extend from six months to five years. Prognosis of dry cardiac type is not good.

II. *The Dropsical type* is the commonest; and hence, the name Epidemic Dropsy. The dropsy is the first symptom in this type. The dropsical type constitutes 60% of all cases. The dropsy appears in the legs in the majority of the cases. It may appear in one foot before the other. The dropsical foot feels heavy, and

pits on pressure. The dropsy increases on sitting long hours on the chair with the feet hanging down. The oedema lessens after rest in bed with the feet on a level with the body, or in a raised foot-rest.

The especial feature of this dropsy is that it is an inflammatory oedema. The dropsical limb presents the four cardinal signs of inflammation; *viz.*, Calor, Dolor, Rubor, Tumor. The part feels hot. A thermometer placed there registers a temperature above normal, may be 99° to 100°. There is dolor or pain in the part, often the pain becomes intense, and the patient may not have sleep at night, owing to the aching and pain in the dropsical part. There is rubor or redness of the part. It is generally dull red in colour, sometimes the redness increases to a brighter hue, as in the case of acute inflammations. At other times, there may be petechiae or subcutaneous haemorrhages within the oedematous part. The tumour or swelling of the limbs increases or diminishes, according to the progress of the disease. Thus, the dropsy of Epidemic Dropsy is characteristic of the disease.

The dropsy may extend upwards to the thighs, buttocks, scrotum, labiæ, the abdomen, chest, face and hands. The internal organs, heart, lungs, liver, kidneys, may all be more or less oedematous. The serous cavities may be filled with serous fluid; *viz.*, the peritoneum, pleura, pericardium, tunica vaginalis. In rare cases, there may be ovarian tumour. The chambers of the eye are overfilled with aqueous humour, giving rise to glaucoma, in a large number of cases. The glaucoma of Epidemic Dropsy differs from ordinary primary glaucoma in many important aspects. These have been thoroughly investigated by the ophthalmologists of Calcutta. The results of their observations will appear in the Proceedings of the 5th Annual Conference of the All-India Ophthalmological Society, held in Lahore in December last. Briefly, it may be noted that the intra-ocular tension rises higher in Epidemic Dropsy Glaucoma, and the field of vision contracts. Although, the eye can bear the high tension for a longer period than in primary glaucoma, yet, ultimately there results cupping of the optic disc and blindness, unless treated in time.

III. *The Gastro-intestinal type* of the disease begins insidiously with symptoms of irritation and sepsis in the intestinal tract, in about 35% to 39 % of cases. Thus, there may be anorexia, hyperacidity, and a sensation of fullness of the stomach. There may be tympanites, mucous diarrhoea, and dysenteric

stools with mucus and blood with foetor. Even, choleric diarrhoea with rice water stools, or sanious pink coloured stools occurs in severe cases. There are signs of intestinal sepsis in all its aspects.

All the three clinical varieties of epidemic dropsy may manifest some of the groups of symptoms of the other types at different periods of the disease, thus proving, that the disease is one and the same, attacking the cardiovascular or the intestinal tract, or, both the tracts, as the case may be.

In all these three types of the disease, there is slow fever with an evening rise of 99° or 100°, and, occasional rise up to 102°, rarely above 102°. The fever is irregular. The rise more often takes place fortnightly, generally before the full moon, or the new moon. The fever is accompanied by exanthems. The skin eruptions are of various kinds, generally, an erythematous rash appears on the innerside of the thighs, abdomen, and back. There may be measle like rash, or copper-coloured rash, and, petechiae. There is generally enlargement of the proximal lymphatic glands with eruptions. Sometimes, there are scabies-like eruptions which may bleed profusely. In long standing cases, there is roughness and black discoloration of the skin, like kala-azar. But, unlike kala-azar, there is more or less leucocytosis and not leucopenia. There is hypertrophy, oedema, and, engorgement of the liver. Hence, the functions of the liver are deranged.

As the disease is prevalent among the rice-eating races, the rice may be at fault. Milled rice, highly polished, and badly stored in damp and dark godowns, have been found fault with Acton and Chopra have found some spore forming proleolytic bacillus of the vultagus type with a histamine toxin (water-soluble) in rice diseased, and in the stools of epidemic dropsy patients, remarkable excess of gram positive bacilli. Thus, the bacilli have multiplied in the intestinal canal. Indeed, the signs and symptoms of an exanthematous slow fever, accompanied by intestinal sepsis, with irregular exacerbations and remissions, irrespective of rice diet, are unmistakable indications of some bacilli multiplying within the intestinal canal. But, as rice meal is eaten after prolonged boiling and never as raw rice, it is difficult to imagine how any bacillus or fungus or spores of infected rice, can survive and multiply within the intestinal tract after being eaten. Moreover, these signs and symptoms of exanthematous fever with intestinal sepsis, persist with usual exacerbations and remissions as before, even after the patient left off rice.

However, this much is certain, that the offending element in epidemic dropsy is not merely a toxin of some fungus or bacillus that produces the signs and symptoms. That is to say, that the disease, is not food intoxication or some other toxaemia, but that some infective agent is bodily present, and is merrily multiplying within the intestinal canal of the patient. Hence, we find the remissions and exacerbations of fever, oedema, and, intestinal sepsis, and, of accompanying toxæmia. On the whole, the disease is a long drawn exanthematous fever,with various kinds of skin eruptions, and intestinal sepsis. The toxin of the disease, whatever it be, has got especial allergic, irritative, and toxic effect, on the sympathetic and parasympathetic nervous system. Hence, the cardiovascular and endocrine systems suffer very much from unstable equilibrium.

The allergic, toxic, and irritative effects of the toxin, on the sympathetic and parasympathetic nervous system, manifest themselves as paroxysmal vagotonia, and, paroxysmal sympathecotonia. The balance of the two antagonistic autonomic nervous systems, is disturbed. The equilibrium, so necessary, for the proper functioning of the cardiovascular system, and the endocrine system, is lost. Thus, when the toxin irritates the parasympathetic to a greater extent, then, syndrome vagotonia appears, in all the organs supplied by the vagus parasympathetic fibres These manifest themselves (1) in vasomotor dilatation, flushing of the skin; allergic manifestations, like urticaria, dermographia; alterations in the peripheral artero-venous coats, causing purpura petechiae, hæmorrhagic patches, angiomatous dilatation of the veins, causing pilelike tumours, in the mucous surfaces of the anus, rectum, vulva, vagina, lip, tongue; also, phlebitis, and, dilatation of the coats of the veins, forming aneurysmal tumours of the veins, along their course, in different parts of the body. The vasomotor neurosis caused by vagotonia produces increased permeability of the blood vessels, to the passage of blood serum into the surrounding tissues, and parenchyma of internal organs. This causes accumulation of fluid in the serous cavities, such as, pleura, pericardium, peritoneum, tumica vaginalis, aqueous chamber of the eyes, œdema of the subcutaneous tissues, and, also œdema of the important organs, such as, the liver, heart, lungs, kidneys, etc. Vagotonia manifests in pulmocardiac neurosis, causing cardiac asthma, bradycardia. There is also neurosis of the gastro intestinal parasympathetic, giving rise to irregular peristalsis, mucous diarrhoea, hyperacidity, and dysenteric motions.

At other times, the toxin of the disease irritates the sympathetic system to a greater extent, giving rise to syndrome sympathecotonia. This manifests itself by vasomotor constriction, and rise of blood pressure. Pulmocardiac sympathetica neurosis gives rise to tachycardia, and, angina pectoris, with difficulty of breathing. Sympathecotonia, also, produces neurosis of the endocrine system. Thereby, the adrenals, the thyroid, and the pituitary glands, are overactivated. Syndrome vagotonia, and syndrome sympathecotonia, appear spasmodically alternating each other, in irregular succession, whenever the balance of their equilibrium is disturbed.

The cerebro spinal nervous system is unaffected. The nutrition of the peripheral, sensory or motor nerves, is not deficient. Post mortem examination reveals no change in the axis cylinder, and medullary substance, of the motor and sensory nerves, no change in the spinal cord or spinal ganglia. There is no paralysis or atrophy of the muscles of the lower extremity, or of heart muscle, nor of the diaphragm, as is the case with Beriberi

There is anaemia of a hypochromic, and mycrocytic type. The red blood corpuscles, and their hæmoglobin content are much below normal. The calcium content of the blood may be a little below normal. The salt index is not much raised, as in other dropsical conditions. There is a tendency to hæmorrhages, from the scabies-like ulcers, from the pilelike angiomatous dilatations, from the aneurysmal venous tumours, from all mucous surfaces, such as of the nose or uterus. There may be melæna, hæmatemesis, and haemoptysis. There are subconjunctival hæmorrhages. There is engorgement of the veins. There is engorgement of the liver, and portal veins. There is a haemophilic tendency. Once the hæmorrhages set in, it is difficult to control. There is severe post-partum haemorrhage, after abortion which generally occurs by the fifth month of pregnancy in epidemic dropsy patients. There is generally no albumin in the urine, not even a trace.

From these important clinical points, it will be seen that the symptoms-complex of epidemic dropsy are allied to (*a*) those of deficiency diseases, such as scurvy, beriberi, ship-beriberi, and (*b*) to those of chronic intoxications, like chronic arsenic, or mercury poisoning, and also, (*c*) to those of chronic infective fevers, like kala-azar.

In all these diseases, anæmia, haemorrhages, hæmophilia are common. Dropsy and diarrhoea may appear in their course,

sooner or later; slow fever, with eruptions and pigmentations of the skin, may appear in certain stages of the diseases; cardiac weakness, and palpitation and pain, may give trouble in severe cases of the diseases, allied to epidemic dropsy.

Differential diagnosis is therefore not at all easy, unless the medical man has thoroughly studied the clinical manifestations of epidemic dropsy. Examination of blood, urine, and stools may reveal nothing to help him. Indeed, the symptoms-complex of epidemic dropsy are resolvable more or less into signs and symptoms of avitaminosis, intestinal sepsis, toxæmia, and slow chronic infections. The close study of "epidemic dropsy in its clinical aspect," is calculated to repay the trouble, as the disease has become wide-spread among the races of India whose staple food is rice.

Observations on the Cause of Pyorrhoea Alveolaris (Paradentosis)*

BY

Dr. S. K. Gupta, B.D.S.c ; B.O. (Pb.)

Dental Surgeon, Ambala Cantt.

RESULTS obtained in treatment must have a marked bearing on the attitude one will adopt on the question whether the cause of this disease is constitutional or local. The fact that so many persons affected are otherwise obviously healthy lends force to the theory that local influences are rather to blame as the primary cause. Whichever view is taken, local treatment of Pyorrhoea is admitted by all to be indispensable, whether it means merely obtaining a better state of sanitation in the mouth, or, in addition, any or all of the operative procedures too well known to need repetition. Whilst not disclaiming the advantages derived from nutritional as well as other forms of constitutional treatment, as a confirmed localist I venture the opinion that these benefits will aid materially in raising the resistance of the patient, rather than attacking the actual cause of the disease.

Predisposition

In studying susceptibility and immunity, two main factors which will predispose are a low resistance and lack of oral

* Specially contributed to the "Antiseptic".

hygiene. Resistance may be constitutional, or it may be a local tissue resistance, the former depending upon the power of the individual for combating any disease. Local resistance may be:—

(*a*) Physiological, relying upon cell regeneration and the function of the blood in dealing with infection

(*b*) Mechanical, comprising dense and firmly attached gum margins, strong connecting fibres and compact supporting bone, as well as the arrangement of the articulating surfaces of the teeth. Another factor which will influence food-packs and calculus formation beneath the gum is the anatomical form of the cervix of the tooth; in other words, when enamel at its junction with cementum forms an abrupt angle, there is greater opportunity for the collection of foreign matter than where enamel tapers to form almost a continuous plane surface with the root.

There is no ignoring the part played by heredity. Even by a casual observation of cases met with in general practice, the fact that in some families more or less all members develop the disease at an abnormlly early age must point towdards a congenital lack of resistance.

Pocket Formation

There is a local theory that subgingival calculus is formed as a result of muscular action. Muscular action, either direct or indirect, causes pockets beneath the gum line. Briefly:—

Direct muscular action, that is of the tongue, lips or cheek over the affected part, by packing and compressing food debris and other waste products mixed with saliva, forms calculus beneath the gum line, and causes the Direct Pocket.

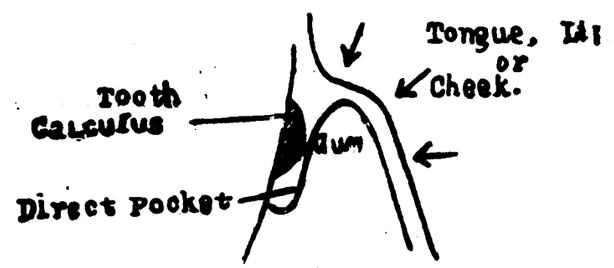

DIAGRAM OF DIRECT POCKET.

The Arrows indicate Direct Muscular Action,

Indirect muscular action, that is abnormal or excessive force transmitted to the peridental membrane by action of another tooth of the opposing jaw during mastication, causes atrophy of part of that peridental membrane and results in an Indirect Pocket.

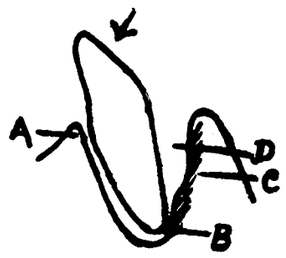

DIAGRAM OF INDIRECT POCKET.

The arrow indicates direction of Stress.
A is alveolar margin acting as a fulcrum.
B is site of crushed apical vessels.
C is area undergoing atrophy.
D is Indirect Pocket.

It is my belief that subgingival calculus is alone responsible for the disease; and it seems that, muscular action precedes and is essential for the formation of subgingival calculus.

Muscular action must be held as the actual exciting cause.

Subgingival calculus as a sequence, is an irritant assisting in the progress of the disease, and without it suppuration and ulceration of the connective tissue would probably not ensue.

True paradentosis demands, of course, presence of the peridental pocket; moreover, included in these pockets will always be found the hard deposit more or less firmly attached to the tooth. An instance of its late arrival may be found in an "impaction pocket" which is due either to lack of approximal contact or to an overhanging lodge of filling. The delay in tartar deposition here is owing to insufficient direct muscular action over the parts concerned. Calculus also at a later stage will occur in the case of the indirect pocket.

Calculus above the gum does relatively much less harm, even though abundant and of rapid formation, the worst results being a localised congestion and recession of the gums.

Subgingival calculus driven by direct muscular action is responsible for the *direct* pocket; it acts as a wedge separating

the soft tissues from the root. In the *indirect* form of pocket, calculus follows later, in the space waiting to receive it. The muscular action responsible for calculus here may be either direct or indirect, the latter only when the tooth has acquired sufficient mobility for the root to mould foreign matter to its surface.

Direct pockets are noticeable in proportion to the amount of muscular friction and pressure over unclean tooth and gum surfaces. Regularly cleansed areas, even though subjected to excessive direct muscular action, will rarely show a tendency towards subgingival calculus and direct pocket formation. This supports the claim that calculus beneath the gum is derived from food waste and its contents: whereas if blood were the source, as in the theory of "alkalosis" for instance, no selection of locality would be made—pockets of equal intensity would encircle all the teeth.

In my opinion no further classification of the disease is required beyond a consideration of direct and indirect pockets.

Both may exist at the same time in the same mouth, and are apparently what have been named "chronic suppurative periodontitis simplex" and "chronic suppurative periodontitis complex" respectively. Another well-known description is Pyorrhoea either "Horizontal" or "Vertical".

Composition of Subgingival Calculus

A further point stressed in my article would be that subgingival calculus, for which I propose the name "food calculus", is composed principally of compressed food debris with which must, of course, be incorporated bacteria, mucin, and saliva contents, as well as discarded epithelial cells and other protoplasmic waste.

In the light of chemical analysis (which I hastily and perhaps unpardonably overlook), I am now quite prepared to change my view, but only regarding the order of proportion of the above-named materials. Two eminent dental professors of Lahore, with whom I differed, are without doubt actuated by the chemical aspect in declaring that all dental calculus or tartar owes its existence to saliva.

Competent independent tests have been produced by me in the Laboratory. Of these specimens of both kinds, which I obtained from a number of mouths, the subgingival calculus showed 78.2 per cent. of organic matter; whereas the subgingival contained 82.2 of similar minerals. These figures by the way,

almost coincide with those quoted in several text-books. When viewed, however, by the ultra-violet rays of the quartz lamp the subgingival fluoresced as a pale blue, whilst the other showed distinctly a copper colour.

Formation of Subgingival Calculus

While supporting these two writers, the mere statement that subgingival tartar owes its existence to saliva does not seem sufficient. Why should saliva sometimes select these areas beneath the gum in preference to adjoining visible parts of the same tooth to which it has far more access? The fact that each type of tartar forms in an opposite direction points towards a difference in the mode of formation.

Whilst conceding the salivary origin of both kinds of tartar, in order to avoid confusion, let us refer to the supra-gingival only as salivary. It commences at the gum line, though sometimes at some higher points, every addition building away from the gum towards the occluding surface of the tooth.

Subgingival calculus, on the other hand, forms in the space which can accommodate but little saliva. The peridental membrane, even though it detaches slightly in advance of concretions, must offer an obstruction; a liquid such as saliva alone could not force an entrance, much less remain there. The fact that progress of this class of tartar is towards the root apex implies the presence of some vehicle travelling in that direction.

It is with a view towards solving this interesting problem that I have advanced the theory of the important role possibly played by food-waste, at the same time still advocating the use of the simpler term "food calculus" in contra-distinction to salivary calculus, which, without dispute, is claimed to result from direct precipitation.

Bacterial Influence

Saliva saturating this food-pack represents only a small amount of mineral, hence the relatively slow formation of subgingival or food calculus. Ammonia, even in minute quantities generated in the decomposing mass, will precipitate magnesium and calcium phosphates brought in by saliva. The pocket is taxed to its full capacity with repeated additions of waste matter, but these minerals, together with small amounts of other salts and certain colloids, comprise the only materials contained therein which are more or less indestructible, in the mouth.

Regarding the many bacteria associated with the disease, those of the pathogenic class have gained by far the most

prominence, whilst those of the benign variety receive little more than passing notice. It is fair, however to give pride of place to the latter, known as saprophytes and fungi, without the action of which compressed food debris would accumulate at an alarming rate. These scavengers, with their function of digesting organic waste, leave little more than the small insoluble residue to form calculus upon the tooth roots. It is notable that the percentage of mineral matter here is even slightly larger than is found in tartar above the gum.

So, while one school claims the disease as due to bacterial causes, let us rather reverse this view, for, were it not for germs, taken as a whole, paradentosis or Pyorrhoea Alveolaris would run a far more rapid course, and teeth would possibly be lost within a few months from the first appearance of the disease.

Sycosis Barbae or Vulgaris*

BY

Dr. Nirod R. Gupta, L.R.C.P., L.R.C.S., (Edin.), L.R.F.P.S., (Glas.),

Late Surgeon-in-charge, Venereal and Skin Dept., Campbell Medical School and Hospital, Calcutta.

THIS **disease is more common** in Bengal than the majority of general practitioners are aware of.

Ætiolgy.—Males between the ages of 20 and 30 are the most apt to develop it. The exciting cause is a type of staphylococci. The predisposing cause is a lowered resistance of the epidermis due to any chronic constitutional disease.

Diagnosis.—The commonest site of the disease is the chin and the upper lip, and it may spread to the back of the neck and eyebrows. I have seen a few cases where the disease has spread to the hair follicles of the chest, axillae, and pubis. They first appear as a crop of papulo-pustules with a hair in the centre of each. They are discrete and are conspicuous by the absence of inflammation. They are usually very itchy and have a burning sensation. In some cases the individual papules may turn into a mass of tiny abscesses. At this stage it is generally infected by a low grade non-virulent strepto—and staphylococci producing vascular dilatation, serous exudation and proliferation of the fixed connective tissue cells. The continued activity of the bacteria produces breaking up of the cells with production of pus,

* Specially contributed to the "Antiseptic".

the follicles being transformed into miliary abscesses. Since the inflammation is not acute the skin merely shows varying degrees of redness. This picture is often mistaken by the non-initiated for eczema.

Prognosis.—This disease seldom undergoes spontaneous cure; it is usually persistent, relapses frequently and may last a life time if untreated. It responds to treatment of the right type very quickly, but in chronic cases it is difficult to get a complete cure.

Treatment.—The treatment of sycosis vulgaris should be done in two ways :—

(1) Local treatment.

(2) General treatment.

1. *Local Treatment*—Wash the parts with warm water and soap, not carbolic or antiseptic soap, but a plain neutral soap; (most antiseptic soaps lower the resistance of the epidermis by its irritation—according to Prof. Gardiner of Univ. Edin.) Apply the following ointment :—

℞

Phenolis	...	ℿ ii.
Sulph. precip	...	grs. xxx.
Adipis benzoinati	...	q. s.—℥ 1.

Fait unguentum ... Apply with friction twice daily.

At night apply a hot compress to the parts for 10 minutes, then apply colloidal iodine oil or iodex which is to be well rubbed in for 10 minutes.

2. *General Treatment.*—General tonics by mouth:—A good one is the following :—

I. ℞

Syrup ferri phos cum quinine et strychnine	...	1 fl. ℥.
Compound syrup of hypophosphites	...	1 fl. ℥.
Syrup ferri phos Co	...	1 fl. ℥.
Aqua dill. ad	...	8 ℥.

A table-spoonful in water thrice daily after food.

II. Two pills of *Stannoxyl* (of Anglo French Drug Co.) 3 times a day.

III. 1 c.c. of Colloidal iodine to be injected every third day; 12 such injections to be given.—The above treatment to be continued for two months.

A Typical Case.—A Mahommedan, male, aged 30, suffering from sycosis of the face for 5 years, gives history of first infection from a barber's saloon after a shave. Had all sorts of treatment before coming to me—Homeopathic, Kavaraji, Unani, with no effect. He came under my care in Nov. 1933.

Slide Result.—On microscopic examination.—strepto-staphylo found.

Description.—The whole of the patient's face and neck looked like raw meat with a mass of yellow spots of the size of pin-heads evenly distributed, each yellow spot protruding from a hair follicle, extremely itchy and painful and sensitive to heat or sunlight. A few scars near the chin marked the site of old abscesses.

Treatment.—I prescribed a general tonic like the above and injected 1 c.c. of Colloidal iodine every third day for two months.

Stannoxyl was given, two pills three times a day.

Local Treatment.—The patient was ordered to wash his face with warm water and Palmolive Soap, then foment it with a hot towel for ten minutes and then apply the following :—

℞

Phenolis	...	ℿ ii.
Sulph. precip	...	grs. xxx.
Adipis benzoinati	...	q. s. ℥. 1.

Fait ungeuntum. Apply with friction twice daily.

At night rub in Colloidal iodine oil over the whole face for ten minutes.

The above treatment was followed for two months. The case showed marked improvement in twenty days and by the fortyfifth day of treatment he had no signs or symptoms of the disease. The treatment was continued for 15 days longer, and the patient discharged. I saw the case two years after when he came to report himself and found that he had no recurrence of the disease.

CASES AND COMMENTS

A Case of Snake-Bite

BY

V. Subramanyam, M.B.B.S.,

Ramachandrapuram, Puducottah State.

THE object in presenting this rather lengthy report, is with the idea that medical men should exert themsevles to educate the villagers about the value of placing themselves for treatment for snake bites under qualified practitioners and to dispel the popular notion that allopathy has no treatment for snake bites, much less any special treatment to save them from the tens of thousands of deaths due to snake-bite in this country.

It was rather under strange circumstances that I was called in to see a case of snake-bite, in an adjoining village. The history is that at about 7 P.M. on February 27th, a Hindu woman aged about 20, was bitten by a snake—a viper. At the threshold of her very house she accidentally trampled on the back of a snake, when the snake turned round and "bit her" twice or thrice and after which when she withdrew her leg, the snake attempted to make good its escape and it was promptly killed. It was found to be a krait (Virian or Nathaichurruti). The patient was immediately taken in a country cart to this place to a magician and a reliable witness tells me that the woman, who was lying unconscious, got up after the performance with the "Margosa leaves". Next morning the patient was tossed up to another adjoining village some five miles off where it is reported that another snake charmer of "unquestioned capacity" to cure snake bites, resides. He too had his hand at the case with enchantments and some local application of a paste of some root. By that evening, the patient has not passed any urine or motion. Hence he gave the verdict that if only any doctor could get those out the patient is sure to survive. The patient was immediately rushed home, that is some 8 or 10 miles and after that alone I came into the scene—that is some 24 hours after the bite. On examination, the patient was found in a lying condition, comatose and occasionally answering questions. There was a slight amount of perspiration on the face, breathing slightly rapid. There was no cyanosis or lividity. The right leg (the affected one) was swollen up to the thigh and smeared with some paste. Closer examination revealed

small nick-like bites at two or three spots over the dorsum of the foot and ankle. There was no swelling in the other leg.

Pupil reactions, knee jerks and abdominals normal; Temperature (Axillary)—99.2°. Pulse—148, feeble and of low volume and tension: Tongue—dry andy slightly coated.

The patient had passed urine just before I went in. She had passed no motion for the past 36 hours or so.

On the whole, I should think, the picture was one of shock rather than af poisoning.

Treatment.—1. A dose of stimulant mixture was given.

2. A small S. and W. enema given with very good result. The villagers numbering 100 or more were greatly relieved to learn that she had passed motion and urinated—as, according to the verdict or prophecy of the charmer, the patient should survive after these two!)

3. As the pulse was fast and feeble, an injection of pituitrin, digitalin and strychnine was given.

4. Ordered liberal doses of Glucose D. and an ounce of a mixture containing stimulants fourth hourly. I did not attempt at any local treatment as they were not quite willing to remove the paste. Also, they were not so keen on my further treatment or injections—(they were quite sure of their grounds).

I informed the head of the family regarding the gravity of the case and the prognosis and how necessary it is to keep up the injections.

I talked to the group of villagers present regarding the capacity of allopaths to treat snake bite—how we would do the local and general treatments and of what great value is the injection of antivenene etc.

As expected, none turned up to me for further treatment even the next morning. And I learnt that the patient collapsed by about 12 noon that day.

To dilate upon the diagnosis: the patient was definitely bitten by a viper—one of the great poisonous variety and she died, say after about 42 hours. Death—if immediate, in cases of viper poisoning—is due to intra-vascular thrombosis, specially of the pulmonary arteries; if late, it may be due to the poison acting on the blood leading to the diminution of its coagulability, leading to extensive extravasation of blood in the internal organs and in the tissues at and about the site of the bite; death can also be due to fright or mental shock—even in cases of bites by non-poisonous

snakes. As already indicated I am inclined to take the cause to be the last one; though the second one might also have given a helping hand. What I wish to impress is, that though the enraged snake turned round and bit her twice or thrice, it had not injected the poison into the system—and a snake bite,—though by a poisonous one, need not necessarily be a poisonous bite, but a "*benign*" one if I can use that word.

Some Observations on the Treatment of Snake Bite

BY

T. P. Tiwari, L.M.P.,

Asst. Medical Officer, Dhamtari, C. P.

A CONSIDERABLE portion of Indian population is rendered extinct every year on account of snake bites. Facilities for proper treatment being almost wholly confined to cities and towns, a very large number of cases of snake bite occurring in far off villages end fatally almost without any treatment worth the name. Even in places, however, where facilities for treatment are or can be available, proper treatment of snake bite cases is considerably handicapped for want of proper equipment and adequate knowledge of the subject. Much has been said and written on the subject, by persons much more able and highly stationed than my humble self, and while there is nothing that I shall be adding anew to the already existing material, importance of the subject is the only apologia that I can offer in justification of what may well be regarded as harping on the old theme.

Snake bite is an acute emergency, calling for the promptest possible attention. Every hospital and dispensary must therefore maintain an ever ready equipment to meet this emergency. Such an equipment should consist of: (1) A rubber ligature of the Esmarch's tourniquet type; (2) Infusion apparatus for intravenous administration of antivenene: (3) Record syringe ten or twenty c.c. (4) A knife; (5) Crystals of potas permanganate bleaching powder and gold chloride; (6) Ampoules of adrenalin calcium chloride and strychnine; (7) An adequate supply of antivenene; (8) Oxygen inhalation apparatus if possible.

The first step in the treatment of snake bite is the determination of the fact as to whether the bite inflicted is one by a

poisonous or a non-poisonous snake. The stereotyped method of treating each and every case of snake bite by antivenene and gold chloride is neither rational nor conducive to the best interests of the patient. It must be clearly understood that every case of snake bite is not necessarily going to be a case of snake poisoning. There are nearly about 300 known species of terrestrial snakes in India and a large majority of them are non-poisonous in nature. Since bites by non-poisonous snakes are not attended with any risks to the patient, it is to say the least, very irritational to inject gold chloride in such cases and leave the patients to suffer the agonising pains of a sloughing gangrene. Antivenene is also similarly uncalled for and an unnecessary waste in cases of non-poisonous bites. Bite by a poisonous snake can be recognised by taking the local and general symptoms into consideration. These symptoms also enable us to differentiate between colubrine and viperine bites. Snake venom is a strong irritant and produces marked local symptoms when brought into contact with body tissues. These in a case of colubrine bite consist of a severe burning pain at the site of bite followed soon after by local paresis. The part becomes swollen and œdematous and the subcutaneous tissue on incision reveals marked œdema and congestion. In viperin bite, the most remarkable feature is a constant discharge of thin blood from the punctures. The part becomes swollen and œdematous and the subcutaneous tissue on incision reveals intense congestion and ecchymosis. General symptoms in a case of colubrine bite consist of ptosis, incoherent speech, inability to stand, gradual development of complete paralysis in the extremities, convulsions, cyanosis, dyspnoea and eventually stoppage of respiration. Death takes place in about ½ to 36 hours. Symptoms in a case of viperine bite are those of haemorrhage and cardiac failure. Bleeding from natural orifices, under the skin and conjunctiva is common. Heart may stop and end the scene within a few hours of the bite or life may be prolonged even up to a week when death takes place as a result of haemorrhage. Symptoms of shock (cold sweats, small thready pulse, unconsciousness partial or complete) appear in a large majority of cases and may be so profound as to bring about a fatal termination by themselves. Indeed a considerable percentage of total deaths reported on account of snake bite is due to shock alone. It is therefore of utmost importance for the physician to interpret the symptoms correctly as they present themselves and treat accordingly. Symptoms of shock are almost synchronous in appearance with the bite while those of poisoning always take some time to show themselves.

Treatment.—Ligature above the site of bite is the first step. To be effective, it must be applied soon after the bite and should be able to stop the whole circulation below it. This object is best accomplished by a rubber bandage. Ligature retards the absorption of poison to a certain extent and allows a little more time to the general and local treatment to produce their effect.

Incision of the part with a view to induce free bleeding is a traditional method of treating all cases of snake bite and may or may not be helpful in eliminating the poison. It should however always be resorted to since besides eliminating the poison to a certain extent it enables us to examine the subcutaneous tissues, appearance of which furnishes an important clue in the determination of the bite being inflicted by a poisonous or a non-poisonous snake.

In the event of a poisonous bite local infiltration at the site of bite and in the surrounding tissues of a strong solution of potas permanganate or 10 c.c. of a 5 % solution of bleaching powder or gold chloride constitutes the ideal treatment. Gold chloride brings about death of all the tissues that it comes in contact with and the slough takes weeks to come out. Bleaching powder is free from this disadvantage and is nearly as effective as the former.

Antivenene is our sheet anchor. The serum issued by Kasauli Institute is effective against cobra and Russel's viper bites only. While it is customary to administer in cases of krait bites also, this is done not because any real benefit is expected to come out of it, but because nothing better to combat the krait venom has yet been placed at our disposal. 100 c.c. of antivenene neutralises about 80 milligrams of cobra and about 150 milligrams of Russel's viper venoms. That quantity should be the initial dose in all cases of such bites. The patient should be kept under close observation and if poisonous symptoms are found to supervene, further doses of antivenene should be administered. Anything upto 300 c.c. of the same can be safely given to a person of average weight. In case of haemorrhage arising out of viperine bites, administration of adrenaline and intravenous calcium chloride should be given a trial. If asphyxial symptoms predominate and respiratory failure appears imminent, oxygen inhalation, artificial respiration and injection of strychnine should be had recourse to.

In the rare event of the patient being seen within 5 to 10 minutes of the bite and the bite being confined to toes or fingers very good treatment would be to amputate the bitten part and place the patient under observation. If symptoms of poisoning appear, suitable antivenomous treatment should at once be instituted.

Occasions shall not be wanting when it shall become impossible to come to any conclusion with regard to the nature of the bite. In all such doubtful cases treatment should be carried out on lines similar to what one would adopt for a poisonous bite.

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EDITORIAL

Treatment of Fractures

In the last twenty five years enormous improvements in treatment, comfort, and results of Fractures have been brought about by the mass experience of the Great War. For many years before the War, it had been the custom to reduce fractures by manual traction under general anaesthesia. The injured limb was then wrapped in cotton wool and put up in a plaster of Paris casing. No attention was paid to the function of the limb, which merely lay in bed and suffered from disuse atrophy. Even when crutches were employed, no normal weight bearing was allowed, or indeed possible, until sound union had occurred. Later on, however, the doctrine of early massage and physiotherapy came into vogue and plaster of Paris fell into desuetude. Padded wooden splints like "back splint", "long Liston" and "internal angular" became standardised. These offered the attraction of easy partial removal in order that the limb could be given "massage and electricity," the aim of which was to counteract the stiffness of neighbouring joints and weakness from disuse. But restoration of function to the injured person was very painful and slow. Loss of employment and sick wastage lasted oftentimes for 6—12 months. In the case of fracture of the femur, however, an advance had been made, in that the principles of suspension and axial traction were brought into play by the Hodgen frame splint in conjunction with the weight and pulley.

Just before the War, open operation and fixation of the fragments by plates and screws, wires or plugs had come into vogue through the work of Sir Arbuthnot Lane and others. During the War, however, every gun shot wound and fracture was necessarily open and infected. No internal splinting was attempted as it was found that introduction of a foreign body aggravated and prolonged the sepsis. As operative fixation was thus contra-indicated, the principle of continuous traction, regained its popularity. The actual pull in most cases was applied either by adhesive media or by direct skeletal traction, in the form of ice tong callipers, Steinmann's pins and Finochietto's stirrup. A great deal of comfort was added by including suspension, as part of the treatment. By this method of treatment the deformity was not much and it gave splendid results. At the close of the War and on return to civil life, the fashion in surgery changed. With complete asepsis and every modern convenience there has been a tendency to maintain the reduction of difficult fractures by internal splinting. Anything definitely fixative was preferred to months of continuous traction.

In the last few years the teaching of Böhler of Vienna has revolutionised the whole treatment of fractures. The cardinal features are:—

(1) Local or regional anaesthesia.

(2) Immediate and accurate reduction of the displaced bone ends.

(3) Absolute fixation of replaced fragments until union has occurred by a non-padded plaster of Paris splint.

(4) Immediate functional restoration of movements including weight bearing while the necessary fixation is maintained.

(5) No open operations, even in 'closed' fractures except where there is separation of fragments, or in fractures involving joints where these joint surfaces are twisted.

Böhler is definitely against setting of fractures in open wound by means of levers and instruments and is also against bone suture by the use of large foreign bodies particularly plates and screws. Infection and osteo-myelitis are the common results of this. Böhler is of opinion that operative treatment involves great dangers because in every fracture the soft parts are also severely injured and because many blood vessels have been

torn by the causative violence. Of ununited fractures Böhler is of opinion that faulty position and interposition of soft parts and faulty treatment are the chief causes.

These basic principles as preached by Böhler, of accurate reduction, fixation and function have thrown out of use many of the old splints commonly used in hospitals and elsewhere till a few years ago. The old back splint with foot piece for fractures of Tibia and Fibula, with or without Clines's side splints and whether suspended from a Neville's cradle or not has been given up in the West. Now-a-days fractures of Tibia and Fibula are accurately reduced under local anaesthesia and the position is maintained by a non-padded plaster of Paris splint of cellona bandage which sets immediately. In simple and transverse fractures walking may be begun almost at once. In oblique and multiple fractures where "telescoping" is to be feared ambulatory treatment is possible. By these methods, in the West, it has been possible to save in sick wastage and reduce hospitalisation and function replaces the usual dreary and expensive ritual of months of physiotherapy.

Other examples of obsolete splinting are the common splints used for a Colles's fracture, such as Carr's, "cock-up" *etc.*, These were widely employed after imperfect reduction; and anaesthesia, if any, was general. They were not comfortable, lacked complete control, and were removed for daily massage and movements. The hand was not used up to three weeks. Now-a-days however, in the West, immediate reduction under local anaesthesia is followed by a complete fixation in a non-padded cellona splint, with the wrist joint half way between flexion and extension, and between pronation and supination, for three to four weeks. The fingers are moved immediately the plaster has set, followed by pronation and supination of the fore-arm. The shoulder and elbow joints are moved with the hand behind the back and over the head. Exercise begins on third and fourth day. It is only necessary to wear a sling for a few days and after two or three days the hand can be used for light duties such as writing and serving. The more the patient works, the better is the progress. When finally the cast is removed, the movements at the wrist are full, free and painless and the ultimate disability, is practically nil.

Fractures of the femur are always difficult to treat. For fractures of the shaft, the principle of continuous traction, elaborated from the experience of the Great War, still holds the field, save that direct skeletal traction has developed and practically

replaced the alternative methods depending on adhesive plaster or glue. In fractures of the neck of the femur, modern treatment has shown the most dramatic progress. Formerly it was the rule to apply weight and pulley extension, the limb being widely abducted. Where the general condition allowed of sufficient time, bony union took place with some shortening, but the patient was crippled mainly by the ankylosis of the hip joint, following imperfect reduction and prolonged immobilisation. Many however died of hypostatic pneumonia. Barely 25 per cent ever recovered good function. Surgeons were content to drive into the neck of the femur from the trochanter nails or pegs which eventually became loose. It was HeyGroves who foreshadowed modern technique when in 1916 he said. "What is required is a massive peg, capable of filling up the neck of the femur supporting it at the correct angle with the shaft and, stimulating new bone formation for repair". This is now fulfilled by the Smith—Peterson's Pin. More recently, however, German and Viennese surgeons have worked out on extra-articular method of approach. The pin is tri-radiate in cross-section, is perforated and guided into position by a previously introduced wire and driven home by a special punch. The various stages are verified by X-Ray examinations. The results are said to be very good.

The treatment of fractures is an extremely large subject and we have only attempted to sketch the bare outlines of improvements evolved in the last twenty five years. For more detailed information we would refer our readers to the very excellent article on this subject in the February 6th issue of our distinguished contemporary the *Lancet* under the pen of Dr. R. Salisbury Woods and from which we have extracted freely and to the many excellent books on the subject, especially that by Bohler. At present the best results appear to be generally obtainable from non-operative methods of safety and improved technique which allow of natural function immediately. By these measures, the present generation will benefit to a very great extent, in reduction of pain, sick wastage, and lasting disability.

GLEANINGS FROM MEDICAL PRESS

Obstetrics and Gynaecology

When is abortion Lawful?—Medical practitioners, in general, and gynaecologists, in particular, have constantly at the back of their minds a doubt which from time to time becomes acute. That doubt is: Can an operation to terminate pregnancy ever be lawful? It is not pleasant for a doctor to feel that in the course of practice he may, with perfectly honest intentions, commit a serious offence. The trouble comes, like many others, from the nebulous state of a good deal of our law. It has from time immemorial been an offence against the laws of the Church and of the land to cause a woman to miscarry, and the principle is embodied in the Offences Against the Person Act, 1861, Section 58. This section prohibits a woman with child from procuring abortion on herself, and then lays down that "whosoever shall unlawfully supply or procure any poison or noxious thing, or any instrument or thing whatsoever, knowing that the same is to be unlawfully used or employed with intent to procure miscarriage of any woman, whether she be or be not with child, shall be guilty of a misdemeanour, and being convicted thereof, shall be liable to be kept in penal servitude—for life". As far as the professional abortionist, qualified or unqualified, is concerned this section presents no difficulties. To the law-abiding practitioner the crux of the matter is the word "unlawful". This word is nowhere defined in the Act, and since the case of R. *v.* Bliss, in which a qualified woman doctor was sent to penal servitude for three years for unlawfully procuring abortion and had her name erased from the *Medical Register*, medical men and women have been asking themselves whether, in emptying the uterus for reasons which have seemed good to them in the patient's interest, they have made themselves liable to a similar punishment. The letter over the signatures of three practitioners in Kenya, published in our correspondence columns this week. may express a general uneasiness.

Research into the legal authorities ends as soon as it begins. The reports contain no case in which the question has ever been dealt with by a judge, even in passing. There is, however, a crumb of comfort in the section itself. By an ordinary rule of interpretation the lawyer assumes that when the legislature prohibits citizens from doing an act unlawfully it must have in mind a lawful way of doing the same act, for otherwise it would have been idle to use the word "unlawfully". This view was

expressed by Mr. Justice Salter in a discussion on criminal abortion held by the Medico-Legal Society in 1927 and reported in this *Journal*. Taylor quotes an opinion given by counsel to the Royal College of Physicians in 1896, which goes a good deal farther: "We are of opinion that the law does not forbid the procurement of abortion during pregnancy or the destruction of the child during labour where such procurement or destruction is necessary to save the mother's life". *Russell on Crime* goes farther still, and says: "The word 'unlawfully' excludes from the section acts done in the course of proper treatment in the interest of the life or health of the mother". As the original author of this work is dead this passage may be cited in court as an authority, and would doubtless be treated with great respect. Taylor, developing the subject, takes a conservative view, and says that it is obvious that the only reasons justifying the induction of labour are to save the life of the mother or to save the life of the child. The learned author quotes the opinions of various eminent gynaecologists who spoke at a discussion held during the Annual Meeting of the British Medical Association in 1926 in the Section of Obstetrics and Gynaecology, and says that the majority of the Section seemed to agree that abortion should be advised only for some definite morbid condition such as tuberculosis, chronic nephritis, heart disease, and certain others; that no one of these diseases could be looked upon as a reason for always terminating pregnancy, but in a particular case any one of them might render abortion necessary. The indications for therapeutic abortion have often been discussed by the heads of the medical profession, and are not a subject of much controversy; they can be found in every good textbook of obstetrics and gynaecology.

This very absence of legal authority may reassure the law-abiding doctor, for it indicates that law-abiding doctors never are put in peril for terminating pregnancy on recognized medical grounds. It is a matter of common knowledge that the profession contains a few members who choose to run the risk of prosecution and who terminate pregnancy without good medical reasons; yet the prosecution of one of them excites intense and widespread interest, simply because the prosecution of a reputable registered practitioner for this offence is extremely rare. Broadly speaking, an abortionist only comes to the notice of the police for one of two reasons: his patient dies or gives information. Except for the very rare cases of death from shock of the mysterious kind so ably described by Sir Bernard Spilsbury the

qualified abortionist hardly ever loses a patient, for he knows how to avoid sepsis and haemorrhage. Mrs. Bliss came to grief because some of her patients informed against her. The law-abiding practitioner who follows Taylor's advice to get a second opinion and the written consent of the woman and her husband or guardian, and who only terminates pregnancy to avert genuine danger to life or health, is not likely ever to have his action called in question. In practice the police are very cautious in prosecuting even flagrant and persistent abortionists; they would not move in a case where the defence would rest on proper medical indication. It is doubtful whether the authorities ever consider a prosecution which would rest on the legal interpretation of the word "unlawful" in the statute. Practically all abortion trials are decided by evidence of fact, and the issue is whether the accused did or did not perform an abortion. The illegality of the operation is never in issue. In the Bliss case the accused, it is true, said she only performed the operation on women who were already suffering from an attempt at abortion, but she was found guilty, not because this was an insufficient defence but because the jury did not believe her. There is no real doubt, either in law or in practice, that a doctor who empties the uterus of a patient who comes to him "bleeding, possibly septic," from an attempt to procure abortion is running no risk whatever. A medical man need have no fear of being convicted, or even accused, on a legal technicality if he terminates a pregnancy with the honest intention of averting damage to health and life. If he widens the indications to include speculative grounds he will lose the support of the consensus of his professional brethren. If he empties a gravid uterus merely because the woman does not want to bear the child he acts at his peril.—*B. M. J.*

Uncontrollable vomiting during Menstruation.—Dr. F. Bernhart, 2nd Univ. Women's Clinic, Vienna. (Ztrlbl. f. Gyn., No. 4, 1937.)

The popular description of menstruation as being unwell indicates that in a large number of women menstruation is regularly accompanied by disturbances. Apart from dysmenorrhoic pain there is a great variety of disturbances, amongst them in individual cases vomiting. Uncontrollable vomiting, however, as observed by the writer, may be regarded as an isolated case. A 24 year old nullipara had, since she was 17 (following a nervous disorder), suffered from violent vomiting which occurred at the commencement of every menstruation and continued to the end

of the discharge of blood. She was nevertheless able to partake of food but she slept badly during the whole time of the period. The woman had repeatedly sought help for her uncontrollable vomiting in hospitals where her stomach had been washed out without her trouble being improved. Small pieces of ice afforded a slight relief. The patient always lost a few kilos during menstruation; when the period was over she felt quite well again and gradually reached her normal weight.—The writer observed the patient at the above clinic and convinced himself that her report corresponded to facts; she vomited several times daily slightly bile coloured matter. Internal and gynaecological examination showed no abnormal conditions; neither did detailed investigation into the circumstances of her life afford any clue as to a psychic origin of the disturbance. Nautisan suppositories were of no avail. In view of the fact that the folliculin level falls in every woman during menstruation, the writer presumed that, in addition to probably existing psychic causes, a hormonal dysfunction was present and injected 50,000 units Follikulin (Follikulin-Menformon) intramuscularly on the first day of the next menstruation. On this day the patient did not vomit and retained light food. On the following morning she vomited again; the vomiting discontinued after she had been given 10,000 units Follikulin. On each of the following four days she was given an injection of 10,000 units in the morning and her vomiting was thus prevented. Three days after the end of her period the hæmorrhage recurred, probably as the result of the large doses of Follikulin, but without any disturbances. After another five days and again after 11 days hæmorrhage recurred. Since that time (5 months ago) the patient has had her period regularly at 4 weeks' intervals without vomiting or any other discomfort. The writer recommends therefore, in cases of this kind, giving large doses of Follikulin in order to achieve permanent results even though the possibility of a disturbance of the normal cycle for a time immediately after the injections must be taken into the bargain.—*Ars Medici.*

Medicine and Therapeutics

Strophanthin Treatment.—According to N. Jagic and O, Zimmermann-Meinzingen (*Munch med Woch.*, October 2nd, 1936. p. 1623) strophanthin is probably the most useful drug now available in treatment of severe cardiac decompensation; often, however, its trial is too long deferred. Its sole disadvantage is that its oral administration, on account of destruction of the

glucoside in the alimentary canal, is uncertain and not fully effective. A preliminary trial of intramuscular injection, combined —as recently recommended by Decastello—with novocain or planocain, has given favourable results (0.5 mg. in a muscle being as effective as 0.25 mg. in a vein), but rectal administration the writers have found unsatisfactory. The chief advantages of strophanthin therapy are: (1) the quickness of the effect, which is produced in a few minutes, while that of oral administration of digitalis is not complete until the third or fourth day; (2) the absence of cumulative effect; and (3) a pronounced improvement of systolic activity, without the prolongation of diastole which digitalis often causes. Strophanthin treatment is indicated in severe acute decompensation, especially if associated with cardiac asthma or pulmonary oedema: in acute heart failure during infectious disease, after paroxysmal tachycardia or extreme degrees of flutter arrhythmia; when digitalis therapy leads to nausea and vomiting or to impairment of intracardiac conduction or frequent extrasystoles; as an alternative to digitalis in many cases of complete auriculo-ventricular block with bradycardial ventricular autonomy; and when insufficiency appears to affect the left more than the right side of the heart. While recognizing the danger of strophanthin treatment after recent acute myocardial infarction the writers strongly recommend it in angina pectoris: in some cases, however, especially luetic ones, the number of attacks are thereby increased. They usually combine the intravenous injection of strophanthin with that of euphylline, theophylline, or novophyllin, which have vaso-dilator, diuretic, and/or sedative effects, and hypertonic dextrose solution, which stimulates the myocardium and dilates the blood capillaries. —*B. M. J.*

Relief of Pain.—Patients rightly regard relief of pain as next in importance to saving of life as the function of the medical practitioner. R. W. Waggoner (*The Journal of the American Medical Association*, September 26, 1936, cvii, 1049) in insisting upon this in a helpful review of the subject, states that when pain has served its purpose as a warning it should be eradicated as soon as possible. After discussing the analysis of the type of pain and indicating that the causative factor should be removed if and when possible, Waggoner offers the following prescriptions (among others) as suitable for certain types of pain.

For the root pain of tabes dorsalis, spinal cord tumour or radiculitis :—

℞ Acetylsalicylic acid	...	3½ grains
Phenacetin	...	2½ grains
Caffeine	...	½ grain
Codeine sulphate	...	¼ grain

To be given in a capsule 1 or 2 at onset of pain and repeated in an hour if necessary.

For headaches of a reflex type or associated with anxiety, excitement or depression, the same can be used with the omission of the codeine.

For headaches associated with gastro-intestinal upsets and toxic factors, such as alcohol, the following is suggested with the warning that habit formation and poisoning must be guarded against :—

℞ Acetylsalicylic acid	...	5 grains
Acetanilide	...	1½ grains
Extract of hyoscyamus	...	⅛ grain

This is given in capsules, one every two to four hours as needed for pain.

For chronic infective arthritis the pain is best relieved by salicylates and the following is offered as a suitable mixture :—

℞ Acetylsalicylic acid	...	3½ grains
Magnesium oxide	...	3½ grains

This is given in capsules, one every three hours.

Note: The prescriptions have been freely adapted for British usage.—*The Practitioner.*

Surgery

Fractures in the Newborn.—A. Thorndike and F. R. Pierce (*New Engl. J. Med.*, November 26, 1936, p. 1013) reviewed 6,000 fractures at the Children's Hospital, Boston, and found that many cases of previouly unrecognised birth fractures were brought at the age of 1 year because of some deformity. Bowing of one leg was common. The old teaching that mere fixation is the only treatment required to produce good results is no longer considered satisfactory. The authors feel that in the great majority of cases the obstetrician cannot be blamed for a fracture arising during the course of delivery. It is pointed out that breech presentations are especially liable to cause fractures as well as other injuries. In this series 113 consecutive cases of birth fracture are reviewed

and fifty-three fractures of femur, and four of the tibia were found. In most of these cases intervention for the delivery of a living baby had been necessary. A large number of these fractures were not recognised at the time of birth, but the authors point out that this is often difficult. Unrecognised and untreated fractures in the newborn heal very rapidly, so that it is impossible to alter the position of the fragments manually after five days. Early diagnosis and efficient treatment are of utmost importance to ensure good results leaving no deformity in later life. Reduction of these fractures does not involve the complicated manipulation necessary in older children. A description of the fixation for each type of fracture is given, with illustrations. Many cases of fracture of the clavicle heal well even though untreated, and are only recognised by a callus enlargement. There was no case of intra-uterine fracture found in this series, and this type of fracture is regarded as rare. In most cases in which fracture occurred the weight of the baby was above the average, and so caused more manipulative measures at birth.—*B.M.J.*

Ophthalmology

New Researches in Trachoma.—A. Cuenod and R. Natfa (*Arch. Inst. Pasteur de Tunis*, No. 2, 1936, p. 295) restate their observations made from the scrapings of trachomatous follicles: they found degeneration of epithelioid cells, lysis of their peripheral protoplasm, and characteristic granular dots in association with the nuclei. They describe their findings when staining with azure II and Geimsa, and note the existence of the granular dots only when trachoma is present. They also describe sections of trachomatous conjunctiva, and the presence close to the nuclei of the epithelioid cells of granular corpuscles, some of which have a cocco-bacillary form. These corpuscles, have the appearance of attenuated parasites which could cause hypertrophy of the nuclei and lysis of the protoplasm. In some cases they form a covering to the nuclei which gives the cell the appearance of a mast cell, very similar to the picture found in epithelial cells with inclusion bodies. There may, then, be a common origin of granular corpuscles and inclusion bodies. The authors are convinced of the existence of a specific trachomatous virus. Bodies have been found in the scrapings and sections whose morphological, cultural, and staining characteristics resemble those of rickettsiae. Data from other workers strengthen this conclusion. They have cultured trachoma virus in lice and found in their intestines a

vast quantity of rickettsiae, and the triturate of such infected lice has produced slight experimental trachoma in two monkeys. They regard this result as probably produced either by the rickettsiae or by the virus preserved or incubated in the intestines of the lice. From their investigations they consider trachoma to be a parasite disease.—*B. M. J.*

Night-Blindness Due to Vitamin-A Deficiency. — Night-blindness may be due to disease of the eye, such as retinitis pigmentosa, but it may also occur without ophthalmoscopic signs. Its connection with defective nutrition has long been known. It has occurred in epidemic form in Russia during Lent, and many cases were observed in soldiers during the war. It frequently is found in scurvy, and it is often associated with conjunctivitis and xerosis of the conjunctiva. These facts, which were known before the discovery of vitamins, have now been explained. Experiments have shown that vitamin A is the precursor of visual purple, and is present in large amounts in the retina. The relation between deficiency of this vitamin and night-blindness, xerosis conjunctivæ and keratomalacia has been established clinically. Night-blindness is an early symptom of the deficiency. The visual defect becomes manifest only after the eye has been exposed to light, which uses up the visual purple. In Labrador, where severe vitamin-A deficiency is common, it is customary to wear a bandage over one eye, while the other is left uncovered for the day's activities. After dark the bandage is removed. The eye which has been exposed is night-blind, but the other enables the person to carry on till next morning.

H. Jeghers reports two cases showing the danger of accidents when the subjects of vitamin-A deficiency drive a motor car.

A man, aged 34, whose photometer reading was 40 per cent. below normal, said that he found driving a car at night a strain, which was getting worse. It required much attention to be sure where the edge of the road was, and a person walking in the dark came dangerously near before being noticed. The lights from passing cars dazzled him. No accidents had occurred, but were feared. Questioning revealed an obviously deficient diet. His eyes were normal and vision in daylight was good. Carotene medication, 20,000 U. S. P. units daily for three weeks, with a change in diet rendered the photometer reading normal, and his ability for night driving much improved.

In the second case a man, aged 31, complained of difficulty of driving by night, especially when exposed to the lights of an oncoming car. One night a policeman threatened to arrest him for "drunken driving". His skin was dry and excoriated from scratching. The palpebral conjunctivæ were dry and there was slight xerosis of the bulbar conjunctivæ. There was no evidence of intra-ocular disease. He was given 30,000 units of carotene daily, and butter, milk and raw carrots were added to his diet. The itching ceased in a few days, his skin became soft and smooth, the xerosis disappeared and vision became normal.—*The Clinical Journal.*

PROCEEDINGS OF CONFERENCES, SOCIETIES, ETC.

The Tinnevelly District Medical Association, Palamcottah

(Affiliated to the Indian Medical Association).

Headquarters Meeting.

The Tinnevelly District Medical Association held its monthly meeting at Palamcottah on Saturday the 29th of May 1937, in the premises of the St. John's College. Members numbering 62 including 3 women doctors were present.

After Tea Party and music, the meeting began under the presidentship of Lieut. Col., T. S. Shastry, I. M. S., the president of the Association. The Secretary read the minutes of the last monthly metting, held at Tiruchendur on Saturday the 24th of Apirl 1937, which were passed. The Secretary read the Code of Medical Ethics for the information of the members of the Association.

Dr. M. Shenbagam Pillai of Sivagiri, read out the notes of a case of Calculus in a female urethra—a rare case.

Dr. P. S. Srinvasan, L. M. P., of the Goverment Headquarters Hospital, Palamcottah, read out clinical notes on the following interesting cases which were successfully operated and treated at the Government Headquarters Hospital, Palamcottah, by Lieut. Col, T. S. Shastry, I. M. S., and those patients also were shown:—

(1) A case of Hydro-pyo Nephrosis.
(2) A case of Parotid Tumour (right cheek).
(3) A case of Osteomyelitis. (Prontosil Treatment).
(4) A case of Cancer Stomach.
(5) A case of large Goitre.

The above cases were fully discussed by the members. Thereafter, the President, brought the meeting to a close by his remarks on each case and summing up the salient and important features of all cases. He thanked the College Authorities for placing the College Hall, at the disposal of the Tinnevelly District Medical Association for holding the Meeting.

Thereafter, an excellent dinner brought the happy gathering to a close late at night.

BOOK REVIEWS

The Common Cold and Influenza and their relationship to other Infections in Man and Animals.—*By J. E. R. McDonagh*, F.R.C.S., 1936 pp. vi + 152. *London*: William Heinemann, (Medical Books) Ltd. Price 12/6 net.

This book contains theories that are difficult to understand, much less believable in the light of modern advancement in Biochemistry and Pathology. It is rather a delicate task to give a review on a book of this kind containing as it does materials hard to comprehend. The author expands his own theories on the causation of diseases and illustrates them with many case reports and treatments. We refrain from saying more about it and hope our readers would read this book and find for themselves what it contains.

Diagnosis of some Delusional Insanity Types in General Practice *By E. Hopewell Ash*, M.D., London: John Bale Son and Danielsson, Ltd. Price *sh.* 2/6 net.

It is beyond doubt that for a successful handling of mental cases early diagnosis is all important, yet it is difficult in general practice to detect these cases sufficiently early to be of use because of the stigma attached to the mentally defectives in Society. In this book the author has given vividly the ways and means of detecting organic from functional states of mental instability. It is well written and we wish all our readers to read this book, as it contains much useful and practical material worthy of one's perusal.

Experimental Physiology—*By George H. Bell*, M.B., B.Sc., Lecturer in Physiology, University of Glasgow. 1937. Pp. 160. Glasgow: John Smith & Son., Ltd. Price 4/6 net.

This has been written to suit the requirements of experimental Physiology for medical students of Glasgow University. The course of exercises mentioned in the book have been found to give satisfactory results inspite of the limited time allotted for practical work. No originality is claimed for the work; this is a modification of those exercises drafted by the author's predecessor Dr. R. C. Garry.

The book comprises almost all the exercises required in the University Syllabus of most of our Universities and as such it may be found useful by students of our University as

well. The book is interleaved by blank pages to record the observations of the student and as such a permanent record of practical work is maintained in a substantially bound book that would last for years. We recommend it to all the medical students going up for their University examination in Physiology.

The Practice of Ionization.—*By J. Newton Dyson*, M.R.C.S., L.R.C.P., 1936 pp 178 with 9 illustrations. London: Henry Kimpton. Price Sh. 6/- net.

The value of Electro-therapy cannot be overestimated in the treatment of various affections. To be successful, cases must be selected and a thorough knowledge of pathology of the condition called upon to treat is essential. More than this a complete understanding of the properties of the various currents and their actions and limitations of their use is necessary. The writer deals with 'Ionization'—one of the oldest of electro-therapy that has of late not been favoured by many. The first 29 pages of the book gives an account of the physical properties of the current employed in ionization, their mode of production and the various apparatus used in producing the desired current. Method of application is dealt with in detail in the succeeding chapter.

Vade Mecum of Medical Treatment—*By D. Gordon Sears*, M.D., (Lond.), M.R.C.P., (Lond.), 1937, pp. 360. Bound in leather cloth. London: Edward Arnold & Co. Price 10/6 net.

The author has given in a concise form an account of the treatment of most of the common ailments met with in General Practice. Diseases are for the most part dealt with in an alphabetical order so as to facilitate ready and easy reference. Treatments of diseases that have stood the test of times and found useful in a long practice have been included and wherever possible alternate methods of treatment have also been suggested, so that the book provides a series of treatment which may be picked up by the individual practitioner according as the condition demands. Treatment that requires hospitalisation and difficult to perform in general practice, has also been given so that the book will also be found useful by the interns of the hospital.

Proprietary preparations that have given good results in the hands of the author and those that have stood the test of times have been included. Posological tables, doses proportionate to age, weights and measures, percentage solutions, thermometric equivalents, calorific value of various food stuffs,

caloric requirements, vitamin content of common foods, approximate time for various types of foods, obstetrical tables, average heights and weights, composition of cerebro-spinal fluids in disease etc. are given in a tabular form at the end of the book. A few blank pages have also been included for the use of the reader. The book we think, would be useful for the busy practitioner, to the senior students and interns and would prove a ready companion to those confronted with difficulties in the routine work.

The book is handy and of convenient size

The Vegetative Nervous System—A Clinical Study— *By Wulf Sachs*, M.D., With an introduction by Sir Walter Langdon Brown, M.D., F.R.C.P., 1936. pp. 168 with 8 plates and 35 illustrations. London: Cassell & Company, Ltd. Price 15/- net.

As the writer observes in his preface to this book, "while the literature on the theory of the Vegetative Nervous System is enormous, there is not, to the best of my knowledge, a single book that would give the reader a quick orientation in and a practical approach to the whole question of vegetative imbalance, would give, in other words, an ordinary description of the various tests, clinical observations, diagnostic criteria and the essential anatomical, physiological, and pharmaecological data". The author has certainly filled in this gap adequately enough by writing this book.

The various tests mentioned in this book are the results of personal experiences gathered over 4 years on a great number of European and South African patients. There are twelve chapters in the book with a useful appendix, bibliography and index covering 161 pages, apart from the introduction by Sir Langdon Brown. The first five chapters are devoted to a consideration of the anatomy and physiology of the Vegetative Nervous System, so lucidly written that they must be read and mastered by every one interested in the subject of Vegetative Nervous System. Chapter VI deals with the clinical syndromes of imbalance of the Vegetative System. About ten symptoms of hyper parasympathetic and on Vagotonia, eight for sympatheticotonia are given. Majority of cases exhibit symptoms of a mixed nature, the so-called Amphotonic patients and the typical complex of symptoms have been described, while five different symptoms of total hypotonia have been described.

Pharmaco-Dynamic Tests, Visceral Reflexes, Dermal Vegetative Reflexes, Pupillary Reactions, Blood and Circulatory System,

and Clinical Significance of the Vegetative nervous system are described in the chapters following.

The book is highly practical and we hope that all our readers will find it an easy approach to a hitherto much discussed and little understood subject. We recommend it to all our readers.

An Introduction to General Practice—*By E Kaye le Fleming*, M.A., M.D., pp. viii + 150. London: Edward Arnold & Co., Price 5/-

The difficulty that confronts a young practitioner after his scholastic career is known to everybody. During the College course and in the hospital he learns just a little knowledge essential to carry on general practice successfully. The approach to the patient and the disease is entirely different in the hospital and outside and it takes a pretty long time to realise this, and one has to learn this art if he wants to be successful in General Practice. The author who is the chairman of the British Medical Association deals with a number of subjects including the mode of dress and the times during which the successful doctor can indulge in his pipe.

The book throughout contains plenty of practical information and hints to start general practice on a firm basis. It is lucidly written and we would put in a strong plea to all our readers to get a copy at once and the money spent on it is money well spent.

Text Book of Medicine—*Edited By J. J. Conybeare*, M.C., F.R.C.P., Third edition pp. 1027 with 25 Illustrations, 24 Plates. E. & S. Livingstone, London, Indian Agents. Butterworth & Co., Calcutta. [Price Rs. 14/- *sh.* 21/-

The third edition has been completely revised with the collaboration of two additional contributors Dr. P. M. F. Bishop, and Dr. W. D. W. Brooks. A new section on Renal Diseases has been added and the book was thus made up-to-date.

The book needs no introduction from us to the medical students with whom it is already popular as a trustworthy volume containing a comprehensive yet concise treatment of the essentials of medicine free from all unnecessary and unproved theories that abound in one text book of a similar nature. A perusal of the contributors speaks for itself with regard to the value of the book and we have nothing to offer by way of criticism. We are sure the present edition will enjoy the same amount of popularity among the students of medicine as its predecessors.

Prospectus of the School of Chemical Technology, Calcutta.—The problem of poverty and unemployment remains still unsolved, though the Government and the National Leaders are trying their best to find a way out. The School of Chemical Technology has endeavoured to improve the situation in its humble way. It has, since 1919, published a series of books on industrial and cultural education, economic improvements, social services, and public health work, suggesting simple remedial measures. Secondly, it has a Laboratory devoted to research and to manufactures. It trains its students to rely on self-help and gives instructions in scientific agriculture, industrial Chemistry, Public Health, Pharmaceutics etc. Copy of the prospectus can be had on application.

PREPARATIONS AND INVENTIONS

Folinerin.—is the new Cardiac-stimulating glucoside obtained from Nerium Oleander and is recommended for all cardiac conditions where digitalis would normally be used and, it has the following advantages:—

(1) Pure crystalline body	:	therefore constant cardiac effect.
(2) Stable towards digestive juices	:	No decomposition as with Digitalis.
(3) Molecule smaller than Digitalis	:	therefore more rapid in action.
(4) Non-cumulative	:	danger of toxicity reduced to a minimum.

Detailed literature and samples are available for the Medical Profession from Messrs. Schering Kahlbaum (INDIA) Ltd., 11, Linghi Chetty Street, Madras.

Horlick's Malted Milk. — Tabloid Nourishment during Coronation.—Troops from India, Dominions and Colonies, Ambulance men and nurses taking part in the Coronation Ceremonies had long and extremely arduous duties to perform. For hours on end they had to stand to or march without food.

Their sole nourishment was a ration of HORLICK'S MALTED MILK in handy tablet form—another proof of the remarkable sustaining qualities of this world-famous product.

Kalzana.—a double salt of calcium sodium lactate. Manufactured by Messrs. A Wulfing & Co., The Hague.

The amount of Calcium that is retained in the body tissues depends upon the degree of blood-alkalinity. A normal acid-alkali balance in the blood ensures perfect retention of calcium. This is brought about by the oral administration of Kalzana. The sodium content normalizes the blood alkalinity, thus ensuring the fixation of the calcium component. Kalzana is employed in cases of general weakness, dental decay, and loss of hair during pregnancy and lactation. It forms an important adjuvant in the treatment of Leucorrhoea and is helpful in cases of menstrual disturbances. It is an effective calcium preparation for oral administration.

Evian Water.—We have received from Messrs. Spencer & Co. Ltd., samples of Evian water. This is a spring water derived from the Cachat springs and the two municipal springs Cardeher's and Clermount. It is a clear, limpid, colourless water, cold and rich in gas which appears in the form of fine bubbles on the side of a glass. It is claimed on behalf of Evian water that it is a diluted solution of electrolytes with a predominance of the alkaline earths. It is said that chlorine is practically absent. The makers claim that it is very useful in renal insufficiency with retention of chlorides and nitrogen, in renal lithiasis, and urinary infections, in high blood pressure, in gout, in biliary infections and choleramic states. The claims are well worth testing and we would recommend every medical practitioner to try Evian water in such cases. The price is not prohibitive and the local agents will, we dare say, supply medical men, with samples for clinical trial.

CORRESPONDENCE

Opium Addiction

S. E. Subadar, L.C.P.S., *Bombay, writes* :—

IN a well known locality in London you will find a number of shops owned by the Chinese, for all outward appearance, doing the trade in antiques. But when you enter the interior of these shops, you will find they are addicts' dens. Many a well known man in society, politics and art, has been allured to these houses of ill fame and has come out morally and physically crippled for ever.

Opium, Alcohol, Cocaine, and Barbituric preparations are some of the drugs used by the addicts. Methylated spirit, Paraldehyde, Atropine, are also used. There is an exceptional case of an addict who took a daily dose of Nitrous Oxide Gas. He ended his career in a lunatic asylum. There is on record, a case of a woman who was addicted to Opium, then Cocaine, then Alcohol, then reckless expenditure, then dancing mania and lastly cathartics.

China is the greatest opium consuming country, now-a-days. Opium smoking is replaced by Morphine injections. Opium habit and Morphinism are more serious problems in China than in other countries.

In Egypt, Opium is taken as an aphrodisiac. But they do not know that the drug after a temporary stimulation diminishes sexual desire and causes impotence. Morphine habit apart from addiction does not cause physical deterioration. There is no change in the Hepatic, Endocrine, and Circulatory functions.

In France, Tr. Camphor Co., is taken in gradually large doses. This habit is called Paragorism.

In India according to Col. Chopra, Opium was introducced by the Moguls. It is taken in the form of a pill and lotion, and smoked, and rubbed in the palm of the hand. It was a favourite stimulant with the Rajputs on the eve of a battle. Now-a-days among the Kathis and the Rajputs its use is popular on ceremonial occasions. I have seen a man taking 200 grains of Opium in one day. This is by no means a world record.

Treatment of Opium addiction by sudden, gradual, and substitute methods :—The quickest and the shortest method of stopping Opium addiction is that of *abrupt withdrawal*. Advantages are: (1) Time involved is only 3 days. (2) Mental effect on the addict after this short period is over. (3) Avoidance of complicted medication. Disadvantages are prostration, collapse and death. Not advised for those who suffer from organic disease, malnutrition, and advanced age.

Gradual withdrawal.—Advantages: Safety as regards prostration, collapse, death. Disadvantages: (1) Absence of psycological effects. (2) Prolonged vigilance. (3) No surety. (4) Can only be undertaken when the addict is kept night and day under trained staff such as in a sanatorium or jail.

Substitution methods :—By using sedative drugs *i.e.* Luminal, Chloral, intravenous Mag. Sulph, Paraldehyde, Atropine dissolved in saline with daily supply of Opium. 30 Mins. of this to be injected every 2 hours. Or till ¼ grain of Atropine is taken in 24 hours. Or pill containing Opium, Nux Vomica, Gentian, and Pepper may be substituted for the morning dose leaving the evening dose alone. This will prevent Insomnia. Minor symptoms such as diarrhœa, epigastric pain, and nausea may be treated by Alkaline mixture. In 3 to 4 weeks the drug can be entirely stopped by this method. In India sudden withdrawal is only advisable in cases who take below 5 grains a day. In children sudden withdrawal should be resorted to. It will at first give rise to nausea, diarrhœa, irritable nature. These can be safely treated by Chalk powder, Bromide and Belladonna. Adrenaline is very useful for distressing symptoms. Insulin with Luminal has some advocates. Canthrides blister may be applied to the chest and abdomen. The fluid of this blister about 2 to 8 c. c. may be injected in the arm every 3 to 7 days. This serum treatment produces a sense of distaste for Opium. Relapses occur. Lecithin treatment is employed in China. 4 to 6 eggs are given daily. Craving may be met by giving Tr. Opi. Lecithin, Pulv. Glyceriza Co. made into pills of 4 grains each and given with Iron and Strychnine mixture: Soya bean Lecithin 60 to 90 grains a day is also used. A German scientist says that an Opium addict should be treated as a case of shock. He has prepared a drug called Rosseum which is taken by the mouth for 5 days. Hospitals on the Continent speak favourably about it.

NOTICE

Indian Science Congress Association

25th (Jubilee) Congress

To the Members of the Medical Profession:—

The 25th Session of the Indian Science Congress will be held at Calcutta from the 3rd to the 9th January, 1938.

On behalf of the Committe of the Section of Medical Research, I request you, as President, to become a Member and contribute a paper to its deliberations. The subscription should be sent to the Honorary Treasurer, Indian Science Congress Association, 1, Park Street, Calcutta.

Papers should be sent to me at the address given below so as to reach me by the **15th of August, 1937, at the latest.** They should be accompanied by three typed copies of an abstract which should not exceed 200 words, and should not contain any diagrams. Papers published or submitted for publication elsewhere will not be accepted.

In accordance with the rules of the Association only Ordinary and Full Session Members have the right to contribute papers for reading at the Session of the Congress. Association and Student Members must have their papers communicated by an Ordinary Member. In the case of joint papers, each author must be a Member of some category.

Under the new rules the abstracts will be printed in final bound form before the meeting. The Executive Commitee have decided that no abstracts will be printed **unless accompanied by the full paper at the time of submission.** This rule will be strictly enforced.

In addition to the reading of papers, it is hoped to arrange some general discussions. Suggestions regarding subjects for discussion will be welcome, and should be sent to me at a very early date. Abstracts of what members intend to say at such discussion should reach me by the 1st October, 1937.

CALCUTTA.
17th May 1937.

UPENDRANATH BRAHMACHARI,
President, Section of Medical Research,
Indian Science Congress Association.

Address of the Sectional President:

82/3 Cornwallis St.,
P. O. Shambazar, Calcutta.

Madras Medical Council

The Madras Medical Council resolves to inform all Registered Medical Practitioners to conform to paragraph 24 of the Code of Medical Ethics, as published by the Council. Whenever they are asked in a Court of Law to divulge professional secrets, they should first of all claim privilege, not to divulge the same, and, if this is overruled by the Court, get this claim recorded and then answer the questions under the express direction of the presiding Judge or Magistrate.

MADRAS.
2nd June '37.

(By Order of the Madras Medical Council.)
JOHN P. PINTO,
Registrar, Madras Medical Council.

School of Tropical Medicine, Calcutta.

"The Three Months' Course of instruction for the Licentiate in Tropical Medicine begins on the 15th July 1937. Applications for the few seats still available should be submitted as early as possible to the Director, School of Tropical Medicine, Calcutta".

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