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The Antiseptic

A Monthly Medical Journal

Edited by

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

CONTENTS.

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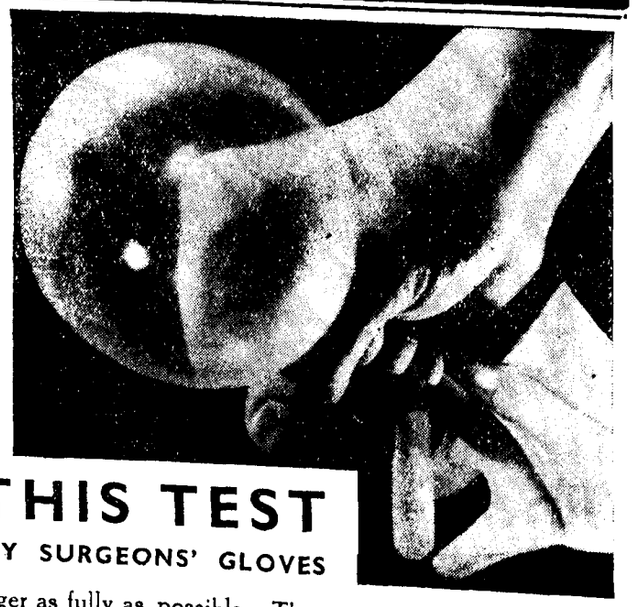

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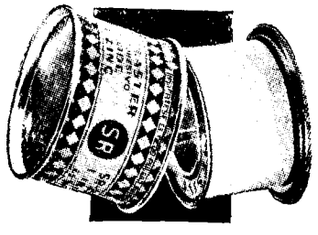

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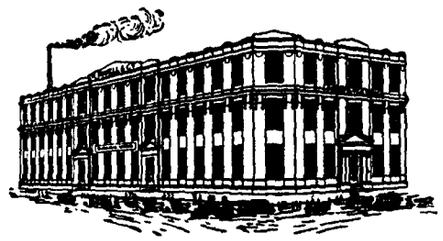

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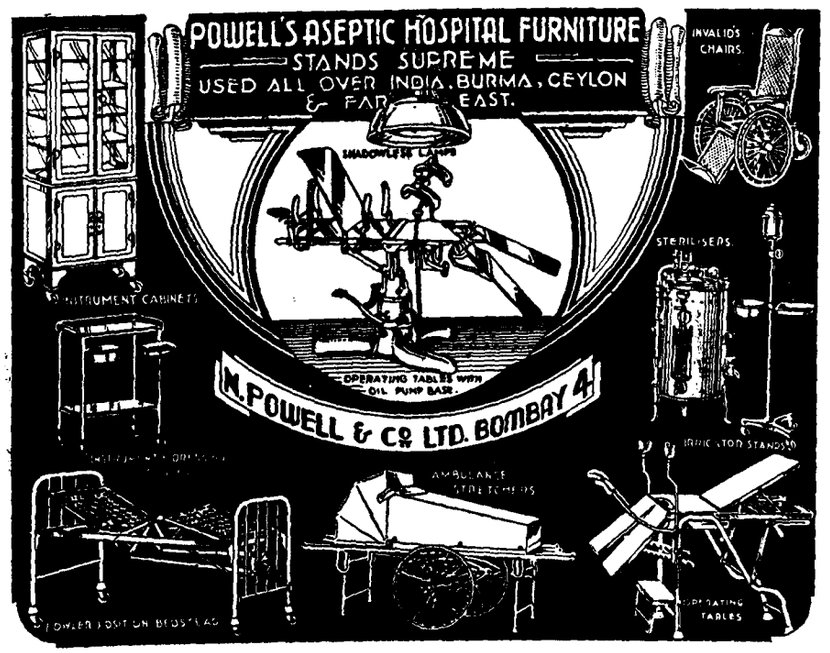

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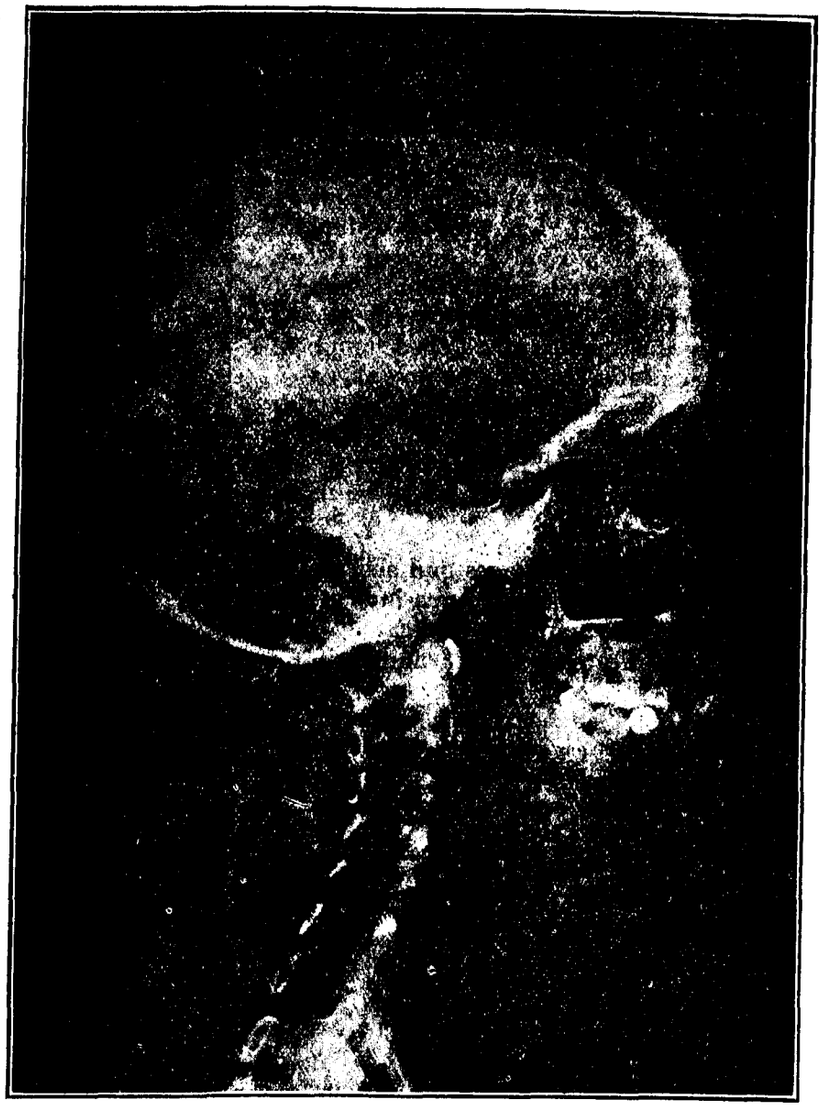

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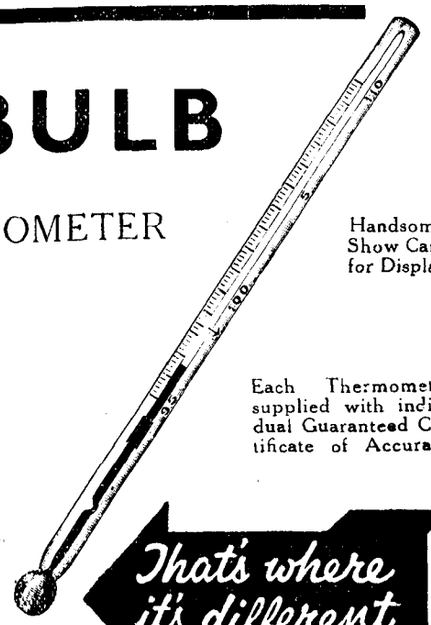

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ORIGINAL ARTICLES

Diarrhœa in Infants and Young Children*

BY

Capt. B. S. Sandhu, I.M.S.,

Superintendent, Central Prison, Ahmedabad.

THIS is a common manifestation of bowel disease both in infants and young children in tropical countries. Its high incidence in the tropics together with its attendant high mortality rate especially among the rural population may occasionally give rise to alarm to the Public Health Authorities who in consequence, may have to adopt special measures, both preventive and curative, to cope with the spread of this disease. The unduly rapid passage of undigested food particles through the alimentary canal in a more or less liquid form may bring about some psychological effects on the worried mind of the poor parents who are sooner or later bound to seek the advice of their family Doctors.

This disease usually occurs soon after the summer monsoons, during the months of June, July and August. This is probably due to the contamination of the drinking water, milk etc., with the infective organisms, and the surface and sub-soil flow of water spreads the disease far and wide. It may also be due to the contamination of the soil by the faeces of patients and carriers. It is quite likely that the climatic conditions immediately after the

* Specially contributed to "The Antiseptic".

monsoons afford very congenial environments for the growth and survival of germs. Flies, fomites, raw fruits and vegetables etc., may also play some part in the propagation of this disease.

Between the years 1929 and 1935, I treated 227 cases of diarrhoea, both in infants and young children, in Northern India with 18 deaths (8% death rate). Most of these cases were treated in their own houses under difficult sanitary conditions. The cases were distributed both among the rural and urban population. As a rule, I found that the children from the rural areas were fairly well built and nourished. But it was rather difficult to ascertain the correct history of the children due to ignorance and lack of knowledge on the part of the nursing mother, who had practically no idea of child welfare work.

Ætiology.—PREDISPOSING: Out of the 227 cases treated by me, 224 cases occurred in summer during the months of June, July and August while only 3 cases came under my observation between the end of February and the beginning of March 1933. This fact overwhelmingly proves that the diarrhoeas are very prevalent during the summer months, and that the prevailing high temperature together with the heat and humidity is one of the most important predisposing factor concerned with this disease. It is the high temperature of the soil that matters most rather than that of the atmosphere. The causative factor, whatever it may be, grows best in the soil while its temperature is at a high level. It is also probable that the heat, by bringing on depressive metabolic conditions, adversely influences the digestion and absorption of food and tends to lower the general resistance of the child. Last but not the least important are the flies which breed in enormous numbers during the summer months on manure, cow-dung, human excreta, filth etc. In the rural areas manure consisting of cow-dung and other refuse from the cattle sheds is stored up for months together and this forms a very suitable nidus for the exuberant growth of flies, which, settling upon milk and other articles of food, tend to spread such diseases like diarrhoea, dysentery, typhoid and even cholera. They also help to disseminate the disease from the sick to the healthy. The infants and young children are very susceptible to diarrhoea as the antiseptic properties of their gastric juice are very small due to little amount of hydrochloric acid secreted. The causative organisms swallowed along with the food pass on through the stomach to the intestines almost quite unhurt.

EXCITING CAUSES: (1) Errors in diet; (2) Worms; (3) Atmospheric changes; (4) Dentition: (5) Infection.

1. *Dietetic errors.*—Among the cases treated by me an overwhelming number of infants and young children were hand-fed and probably overfed too. On enquiry, it was found that as most of the mothers had no breast milk sufficient for the needs of their children, artificial feeding had been resorted to. Over-feeding, dirty condition of the feeding bottles, teats, impure and adulterated milk formed the chief causes of diarrhoeas.

2. *Worms.*—These frequently irritate the bowels and by upsetting digestion lead to diarrhoea. The itching and redness round about the anus and buttocks might give clue to the real nature of the condition.

3. *Atmospheric changes.*—As has already been explained above, the heat and humidity of the atmosphere unfavourably affect the digestion and absorption of food and lower the resisting power of the child to infection. Sudden changes in the weather also produce similar conditions.

4. *Dentition.*—Diarrhoea is very common among children when teething is going on usually between the ages of 6 months and 2 years. This is probably due to developmental changes going on in the body in general and in the intestines in particular. The intestines at this time are in a peculiar condition of intolerance and any slight dietetic error at this time abruptly leads to a disordered condition of digestion and incidentally to diarrhoea.

5. *Infection.*—This may be carried through cracked and infected nipples, teats or through milk or other food on which flies have settled, especially where proper sanitary measures have not been adopted.

In the majority of my cases, however, dyspepsia was found to be the chief cause of diarrhoea probably due to chemical disturbances of digestion in the alimentary canal. The part played by bacteria appeared to be small and only secondary.

Course.—Diarrhoea may follow one of the following courses: (1) It may be a simple catarrh with no fever. (2) It may have an acute onset with high fever. (3) It may be chronic from the beginning with frequent watery stools.

In actual practice, however, so many varieties are met with that it is rather difficult to put down hard and fast rules for their classification. My method was always to follow the clinical course in a particular child.

1. It may be a mere gastric-intestinal catarrh more commonly seen in poorly-fed children. There is pain in the abdomen,

vomiting and passage of normally looking stools with slime. Two of my such cases were mistaken for T. B. Enteritis till they were properly diagnosed and treated.

2. It may start as a simple diarrhoea with yellow frothy stools containing undigested food materials and mucus. Temperature usually ranges from 102° F. to 103° F. No blood in stools. Vomiting may or may not be present.

3. It may follow an acute course simulating acute dysentery or even cholera. The onset is sudden with profuse watery, green coloured motions. There is vomiting and the condition of the child is anxious. Face is pale and pinched. The extremities are cold and covered over with clammy sweat. Sometimes there may be convulsions. As the disease advances the inflammation extends both downwards towards the colon and upwards towards the stomach giving rise to serious symptoms. Acidosis is very common in this variety due to depletion of large amount of body fluids in the form of diarrhoea and consequent concentration of the blood with waste products of tissue metabolism.

4. It may be fermentative or putrefactive.

(*a*) *Fermentative.*—This is usually due to giving too much of starchy food to children. In some of my cases the chief food of children between the ages of 3 and 5 years, consisted chiefly of wheat-bread with raw sugar (gur or jaggery). The stools are liquid, frothy and acid in reaction. As the disease advances the children gradually lose their healthy appearance becoming restless and sleepless.

(*b*) *Putrefactive.*—In this case the stools are usually foul smelling, firm in consistence and alkaline in reaction. This variety is usually seen in children brought up on meat diet.

DIAGNOSIS.—Is based on the following points :—

1. History of the illness as obtained from the child's parents.
2. Clinical examination of the child.
3. Examination of the stools. (*a*) Naked eye appearance (*b*) Microscopic and (*c*) Bacteriological examinations.

Bacteriologically, a bacillus identical with Shiga has often been found in the dejecta of the children suffering from Summer Diarrhoea. Other organisms that are usually found are *bacterium lactis aerogenes* and *bacterium coli communis*. These organisms

are often seen in the stools of healthy children brought up on milk diet. When the diarrhoea is set up the number of varieties of organisms is greatly increased and no particular form has been found to bear a specific relation to diarrhoeal fæces.

If the naked eye examination of the stools is carried on within half an hour of their passage, it may be possible to say with a fair amount of certainty whether the lesion is in the small or the large intestine. When the lesion is mainly limited to the small intestine, the stools are bile coloured and contain undigested food particles. Mucus may or may not be present. If present at all, it will be very small in quantity and thoroughly mixed up with the other elements of the stool. When the lesion is limited to the large intestine, mucus will be copious and more or less quite separate.

TREATMENT.—Even after the illness has commenced much may be done by hygienic measures to diminish the severity. The child should have abundance of air space with plenty of sun light and fresh air. Greatest cleanliness must be observed with regard to the child, and the clothings, feeding bottles etc., should be kept scrupulously clean.

Diet.—This should be such as will only leave a very small residue in the intestines and should not allow to form a media for the growth of bacteria. Such things as pure water, barley water, isafgul water, whey, lime juice, etc., may be given. Later on, when the irritative mass has been cleared off, it may be gradually substituted with dilute milk (half to half parts) chicken-broth, tomato soup, arrow-root, rice water etc., I have always looked upon absolute starvation as the best course though this is very difficult to carry on in the case of children. In several cases, I have prescribed normal saline with glucose 3 to 5% to be given orally. A few drops of brandy may be added to this in the case of very weak children. In case the child refuses to take or it is difficult to give it, infusion of about 3 to 4 ounces of the same with about 5% of glucose may be made at body temperature into the loose areolar tissue of the chest. This may even be injected into the intraperitoneal cavity without any untoward symptoms. In two children, one of 6 years and the other of 7½ years of age, I administered saline intravenously with very good results.

Medicinal.—Castor oil should be preferred as a purgative in the case of infants and young children. It will sweep away the intestinal tract and relieve irritation. If there is much nausea or vomiting, calomel gr. ⅛ with sod. bicarb grs. 5 is very helpful.

The stomach and the lower bowel may be irrigated with a weak solution of Sod. bicarb or with normal saline. The irrigation of the lower bowel may be repeated every day till the bowels are clear. This removes the irritating material and diminishes the absorption of toxins. If the child is restless on account of excessive peristalsis, voilent colic or if the passage of motions are numerous, Tinct. opii in a very small quantity has proved very useful. In any case it should be used very sparingly and never until the bowels are thoroughly emptied and the stools are watery and clear. Bismuth has been regarded as a very useful intestinal astringent and may be given in combination with calomel and Pul. Ipeca co. In some cases saturated solution of Kaolin with bismuth has proved effective.

In ordinary cases of diarrhoea the following powder :—

℞ Isafgul powder	...	3 1
Anisi seed	...	grs. 30
Sugar	...	,, 30

given in six divided doses every day with a little water has been found to be of much use. Infusion of Isafgul (prepared by immersing 2 drms. of isafgul seeds in 8 ounces of cold water for the whole night) with a little glucose may be given both morning and evening to the infants. For older children about a table-spoonful of swollen seeds of isafgul can be given every six hours. In case the diarrhoea is very severe with passage of blood and mucus, the following well-known mixture is serviceable.

℞ Mag. Sulp.	...	
Sodii. Sulph.	...	āā grs. 20
Syrup	...	ʒ 1
Aqua mentha pip. ad.	...	℥ 1

One table spoonful every 4 hourly.

If the condition is still resistant to treatment anti-dysenteric serum may be given with advantage.

SYMPTOMATIC TREATMENT:—1. Pain in the abdomen.—If there is much colicy pain, hot linseed poultice, warm stupes or hot applications to the abdomen may be made.

2. Vomiting.—Wash out the stomach with normal saline or with a weak solution of Sod. bicarb. All feeding should be stopped and only few sips of water should be given.

3. High fever.—Ice packs or cold sponging should be recommended.

4 Restlessness.—In cases where the children are very restless, Chloral Hydras grs. 5 has proved a good success.

5. Tenesmus and Steaming.—Rectal injection with warm water or normal saline at body temperature will relieve.

6. Collapse.—Hot bath with a little mustard, camphor in oil injection; infusion of normal saline with a drop or two of adrenaline or normal saline intravenously with 5% glucose will be of use in tiding over this.

Summary.—Diarrhoea in infants and young children should always be taken very seriously as the mortality in this disease is very high especially among the poorer classes. It is a common custom in the rural areas of the Punjab to give opium to the children to keep them quiet when their mothers are working in the fields. It is a very pernicious system : for, it not only deranges the digestion but prolongs the diarrhoea for a long time leaving it undetected, and the consequent damage to the intestines is great and almost irreparable.

Diarrhoea is the greatest scourge and it claims a very high toll of mortality among young children. Propaganda work based on the following points may be carried on to eradicate the disease :—

(1) Diarrhoea is very common in India and it is more prevalent among male than female children.

(2) When parents are suffering from chronic dysentery, it can be transferred to the young children.

(3) Special lectures may be introduced in the schools to acquaint the students with the dangers of this disease, and the methods for its prevention especially with reference to cleanliness, flies etc.

(4) Wide propaganda may be carried on by distribution of pamphlets and making this movement a part of the Village Uplift Scheme.

Cholesteoma

There is nothing much better for the control of cholesteomatous discharge from the ear than a solution of salicylic acid in alcohol. This solution not only controls the disagreeable discharge but also appears to influence the cholesteoma itself favorably.—*The Eye, Nose and Throat Monthly*

Notes on the Technique of Cholecystectomy*

BY

Suresh Chandra Das Gupta, L.M.S., (CAL.)

Surgeon Superintendent, Bir and Town Hospitals, Katmandu, Nepal

THE operation of Cholecystectomy was quite rare when we were students in the Medical College, Calcutta. A few years after graduation, I had known of a patient in a big family suffering from Cholecystitis who had been negotiating to get either Dr. Mayo Robson or Lord Moynihan (then Sir) from London for the operation for £ 5000/-. But, now-a-days, this operation in Calcutta has become one of almost daily occurrence. At first, Cholecystostomy was performed, which was followed later on by Cholecystectomy, being the ideal operation.

Indications.—Cholecystitis, presence of stones in the gall-bladder or cystic duct, thickening and obliteration of cystic duct, chronic obstruction of the common duct, white and thick wall of the gall bladder, an infected bladder, are cases in which Cholecystectomy should be performed at the earliest opportunity, if possible, after the second or third attack of colic.

Contra-indications are tachycardia, biliary cirrhosis, deep jaundice existing for many months and asthenic appearance (Pauchet).

Jaundice patients have an increased tendency to bleeding during and after operation. "Experience has shown", assures Kirschner, "that the technique of operation in an acute attack is not materially more difficult than in the interval", and the surgeon should not wait indefinitely for favourable signs, but operate, as soon as possible, to prevent serious complications. According to his experience, a night's rest, with narcotics, free evacuation of bowels, return of normal temperature and steady condition of the heart "counterbalance a delay for few days ".

Preparation.—It is identical with that of any other abdominal operation. To combat with the tendency to bleeding is to give the patient calcium chloride by mouth in thirty grain doses for two or three days prior to operation and in sixty-grain doses per rectum for a few days thereafter (Mayo-Robson). Kirschner

* Specially contributed to "The Antiseptic"

further advises that vitamin D and glucose should be give in addition. It is best given in a 5 or 10 per cent solution from 50 to 100 grams every 24 hours for 3 or 4 days before operation. "Glucose will do more to control bleeding than will calcium".

Position.—In operations on gall bladder, it is very needful to "Prop the back forward in the dorsilumbar region" (Romanis and Mitchiner) by means of a firm sand-bag $18'' \times 6'' \times 3\frac{1}{2}''$, a pillow, rubber-bag, or by raising an adjustable bar of a modern operation table—which elevates the loin three to four inches, pushes the spine forward and with it the liver and makes the gall-bladder and its ducts much more accessible to the surgeon. The pillow or block ought to reach the inferior angle of the scapulæ so that the intestines fall into the pelvis. Kirschner advises the surgeon to stand on the left of the patient since with the patient in left lateral position, the operator has better access from the left side and a better view of the biliary passages. However, I find it suitable to do it from the right side.

Incision.—Most of the surgeons make a *vertical* incision; some use right paramedian incision, some prefer an oblique and some a transverse. Mayo Robson's incision is made over the centre of the right rectus in its upper half, anterior sheath is incised, muscle divided or split longitudinally: and if not sufficient, a further prolongation of the incision upwards and inwards for two or three inches parallel to the costal margin helps better exposure of the ducts; even if that does not suffice, the lower end of the incision may be prolonged outwards across the rectus muscle. Bevan makes an incision along the outer border of the rectus; if the incision be insufficient, he enlarges its upper end upwards and inwards, and its lower end downwards and outwards.

Villard makes an *angular* incision, of which the upper part is *oblique* and parallel to the right costal border, and the second part *vertical* along the external border of the ructus. If the calculus be entirely in the gall-bladder, the internal part of the oblique incision can be dispensed with in order to save the internal mammary vessels.

Kocher's oblique incision is made parallel with the costal border and about two fingers' breadth from it; it is liable to be followed by hernia unless rectus is sutured to its sheath before it is divided.

Transverse incision is sometimes employed from the ninth costal cartilage, but it does not give a good exposure. Rutherford Morison makes a transverse incision from the ileo-costal space to

the outer edge of the rectus in front; it gives free access to the gall-bladder and the ducts, and permits of easy *posterior drainage*.

According to Koinig high epigastric incisions affect respiration unfavourably, so he makes a median incision downwards for an inch or so, not less than three fingers' breadth below the ensiform cartilage and then curves the cut transversely across the right rectus muscle to its external margin.

Dissection.—Having stopped all bleeding immediately and completely as it occurred, the peritoneum is opened. Next, the gall-bladder is looked for and packed off from the surrounding viscera with sterilized towels or compresses. Then the gall-bladder should be felt in the first place, palpated and examined, and after that the cystic and common duct palpated through the foramen of Winslow between the index and the thumb. The common duct would be found at the right border of the lesser omentum in front of the portal vein and on the right of the hepatic artery. It is very important to make a careful examination of the gall-bladder and its ducts in order to discover any obstruction; and if so, its exact nature, and then to determine the course of operation to be followed.

Now, an assistant seizes the right lobe of the liver with two compresses or cotton gloves and holds it "*Turned over* on the right costal margin" (Pauchet). If there be adhesions between gall-bladder or bile ducts with stomach, duodenum or colon, we must separate and free them by gauze stripping, snipping with scissors or dissection with sharp or blunt instruments according to need, and divide the vascular ones between ligatures.

The removal of the gall-bladder may be commenced at either extremity (Thomson & Miles). It may be removed either in the direction from the fundus to the cystic duct (direct method), or from the cystic duct to the fundus (retrograde), *i.e.*, from the head to tail or from tail to head. In the absence of adhesions, Thomson & Miles prefer to commence dissection by isolating the cystic duct. If there be tight adhesions it is better to excise the gall-bladder by *direct* route from above downwards; and if loose, to commence from below upwards and reach the neck and then the duct along its course; but very often the neck is twisted, and the duct with which it communicates is not always in the same *line* or *plane*. The other method of starting at the duct is a better plan and an ideal one according to most of the surgeons; of course, it is difficult in the beginning and once the duct is isolated the rest of the operation is quite easy. In the opinion of Pauchet, the most favourable

for operation is an enormous gall-bladder thickened and crammed with calculi. According to Kirschner, if the junction of cystic duct with common duct cannot be exposed clearly and easily, then freeing of the gall-bladder in the direction from the fundus towards the cystic duct is to be preferred. Grey Turner asserts that "The objection to beginning at the fundus is the difficulty of preventing blood running down and obscuring the more important region of the neck, and the undoubted risk that, unless special care is taken the hepatic and common ducts may be pulled up in the form of a loop and divided without being recognized". (Carson). Again, if some anomaly of the ducts is discovered when the neck is reached, contra-indicating excision it may be too late to recede. Furthermore, if the gall-bladder has to be preserved for anastomising it to some part of the gastro-intestinal canal, there is no hope if the gall-bladder is already separated from the liver.

Retrograde Method.—The peritoneal reduplication in the region of the cystic duct is put on the *stretch* and then divided in the direction of the duct. This sheath encloses the cystic artery and duct besides a considerable amount of fat. All visible vessels should be ligatured before being cut. Turner strongly urges that a mass of tissue should not be caught and tied blindly in order to stop haemorrhage, rather let the forceps be left *in situ* and loosened after forty eight hours, and then removed after a few hours if there be no bleeding. The cystic artery is seen to the inner side of the duct and then passing usually behind (or sometimes in front of) the duct. It should be picked up on an anurism needle and tied—the artery first, and then the duct; some tie one or the other according to circumstances. The duct should be secured after carefully avoiding injury or ligature to the hepatic artery or duct. The ligature of either of them would result in death of the patient. So the cystic duct must be isolated, laid bare like an artery (Pauchet), and fully identified before ligature. It should never be divided as a rule, until the *three ducts are actually seen and isolated.* In ligaturing the duct the catgut or forceps should be applied below the last stone and the ends of the catgut to be threaded on a needle and passed through the wall of the lumen and tied carefully. If there be no stone, in the duct, the ligature should be applied in the *middle of its duct* —neither close to the gall-bladder nor close to the common duct (Pauchet), and divided between two ligatures. Binnie advises to use the cystic duct as a guide to expose its junction with the common duct.

If it be desired to drain the biliary passages, only one ligature or clamp may be applied " between the gall-bladder and the point of section of the duct ", and the stump of the duct is left *open*. Any gall-stone present in the duct should be removed either with a scoop or forceps, or *milked* upwards by external pressure with the thumb and the index finger, having guarded the surrounding parts with towels. If it is not possible to do so, the hepatic or common duct may be incised longitudinally and then stitched up with fine catgut after removal of the stone, or it may be drained by passing a rubber tube upto the hepatic duct and fixed there by fine catgut sutures.

Next, the gall-bladder is dissected out of its bed; the peritoneum on either side is divided with scissors or knife about half-an-inch from its reflection on to the liver on either side. If the proper " plane of cleavage " be found out the separation presents no further difficulty. If the gall-bladder be too full, it should be emptied by a trocar and then closed by pressure forceps; if the base be too broad the peritoneum may be incised in the middle in the long axis, or if attached with a long mesentery it must be divided between ligatures; but if buried, the liver parenchyma may be divided at its thinnest part, and then removed by dissection preferably with an electro-surgical knife. Bleeding from liver is checked by use of adrenalin, Paquelin cautery, sponge pressure or suture.

The ligatured stump of the cystic duct is then buried by bringing the cut edges of the peritoneum over it, and closed by interrupted Lembert sutures. Next, the peritoneal flaps are brought in apposition and stitched with catgut covering the bare raw surface of the liver—the bed of the gall-bladder.

Direct Method.—The gall-bladder is dissected and separated from its liver bed as described before. There is more chance of haemorrhage from the branches of the cystic artery which are apt to be divided before the main artery is tied. Careful dissection is necessary to isolate the neck and the duct; and the neck should be used as a guide to expose the duct. Finally the cystic duct is caught, laid bare above its junction with the common duct and then divided between two ligatures. The stump is then buried in the same manner as described above.

In every case the operator must examine the resected structures at once, so that if any injury be done, it may be repaired immediately. If the hepatic duct be injured and cannot be properly sutured, it is preferable to anastomose it with either

duodenum or stomach. Lambert finds anastomosis to the duodenum is better than cholecysto-gastrostomy and that the duct should be grafted in the same manner as ureter is done into the intestines. Anastomosis of the end of a bile duct has been successfully done by Kirschner with a loop of small intestine and short-circuited on one side. If it is impossible to anastomose the stump of the bile duct with a segment of the intestinal tract the surgeon should not be totally hopeless. Kirschner devised a plan of insertion of a permanent prosthesis made out of good rubber, that shall remain in the body for life. Amongst others, the names of Kehr, Mayos, Wilms, Judd, Langenbuch and Stubenrauch are worthy of mention. Stubenrauch dissected out a gastro-duodenal flap turned up and sutured into a tube to cover the hepatic end of the duct.

Then comes the question of drainage: According to Kirschner bile may escape from tiny ducts in the bed of the excised gall-bladder, and also from the stump of the duct, so it is better to insert a drainage tube. Pribram of Berlin strongly advocates closing all without drainage and to avoid oozing; he destroys all the mucous membrane with a cautery. (*Medical Annual* 1929). Von Haverer greatly favours the T—tube when the common duct is to be drained. On the whole most of the surgeons now are in favour of external drainage. (*Medical Annual*, 1936.), which though imperfect, is safest. One drainage tube is often sufficient. Rendle Short recommends the use of a strip of corrugated rubber dam drain and considers that this is quite sufficient for the bed of the stump. But if bile passage is to be drained, then another tube with one or two openings at its tip is required; this must be inserted into the duct and held there by purse-string suture. The tube at the bed should be removed after 48 hours, and the other for the duct should not be removed before 8 or 10 days until the suture becomes loose, and then it is fit for removal. The ends of the tubes may either be brought out through the main wound or a stab wound at the most dependent part.

POST-OPERATIVE TREATMENT.—The treatment after an uncomplicated operation is all the same as done in every other major laparotomy. If vomiting be excessive, it is advisable to employ a Jutte for continuous drainage of the stomach. Kirschner gives every laparotomy patient (except after operation on the large bowel) a low enema of 50 to 100 c. c. of glycerine and water every morning after the second day of operation. If this fails high enema of soap and water should be given, and an injection

of pituitrin (1 c. c.) also stimulates peristalsis, and should be given.

As a rule, no solid food should be given in the first week after operation. Liquid food is best for the first few days, soft foods without bulky residue may be given afterwards. Intravenous Saline and glucose are very effective to dehydrated patients, and must be given in due time and in due quantity, otherwise it is no good. In severe bleeding repeated transfusion of blood is the only means to save the life. The inserted tube is shortened daily and removed totally between eight or ten days.

Enuresis or Bed-Wetting*

BY

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ENURESIS may be a symptom of many physical diseases as inflammations of the kidneys and bladder, chronic gastric intestinal diseases, tuberculosis or rickets; of local irritations in the genital region as adherent prepuce, phimosis, narrow meatus, rectal irritation due to worms particularly pin or thread worms, of highly concentrated and acid urine; and general conditions as anæmia, malnutrition and a constitutionally unstable nervous system. The necessity for a careful physical examination, in order that the various physical causes responsible for bed-wetting may be eliminated, cannot be over emphasised. To deny a child suffering from bed-wetting which is due to some physical cause, the necessary medical or surgical assistance and advice on the assumption that the trouble is simply a poor habit training and to make demands on the child to overcome a condition that is beyond his control, is both futile, cruel and calamitous. A physical examination, therefore, is essential in every case.

Enuresis may also be a habit due to faulty training or some interruption in right training. In other words, the cause and persistence of this condition depend upon faulty habit formation. One must, therefore, bear in mind this fact, namely that even after definite physical causes have been found and removed the enuresis may still persist purely from habit. In most cases the condition is purely a habit often associated with other habits and

* Specially contributed to "The Antiseptic".

indicating an unstable or highly susceptible nervous system. In the majority of those cases occurring after the second year, the fault can be attributed to the parents. Their failure to establish the "dry habit" may be due either to their ignorance of the importance of habit training or their laziness in feeling that it is too much of a trouble to take the child up at inconvenient hours and allowing him to get accustomed to wet drapers. The enuresis habit is often accepted by parents as something beyond control and due to inheritance: consequently they simply wait for the child to outgrow the habit as they did. It is chiefly parents who, as children, had been shamed, humiliated, punished and frightened by those who tried to overcome their enuresis habit that show such sympathy to their children. The fact that enuresis is met with in several children in the same family does not mean that it is hereditary and therefore hopeless. On the other hand, such a state of affairs would indicate poor training on the part of the parents. At other times the parents throw up the sponge in the belief that all the various measures they have tried had failed. Parents must be assured that the condition is controllable by a plan which takes into consideration all the aspects of an individual case. The child, too, often takes it for granted that he must persist in the habit, and consequently no effort is made to overcome it. It is a great mistake to give the child the impression that he has no responsibility for overcoming the habit. The parents must not be too casual about the matter in their endeavour to prevent any unpleasant and emotional reaction towards the habit. For the parents to tell other members of the family and friends that "the child has inherited this habit", that "he has weak kidneys and nothing can be done" is to make the securing of the child's co-operation a very difficult matter. At the same time the child should not be allowed to feel that because so many are concerned about his problem there is little or nothing for him to do.

The co-operation of the child is the first and most important step and it should be secured by appealing to his love of approbation. The most important feature of the treatment of this condition is to prevent the child developing a feeling of inferiority complex because of the habit, as feelings of inferiority and shame associated with many cases of this kind often colour the entire mental outlook of the child. There is every reason to believe, despite the marked differences in the ways which children respond to training and the ease with which they form habits, that every child who is free from physical defects can be trained to proper toilet habits by persistent and conscientious effect on the part of

parents. The first and most important step in the treatment of this condition is to interest the child in making an effort to overcome the habit. In order to do this successfully the problem should be presented to the child in such a manner as to convince him that the result is one within his grasp and capable of achievement. The child should be made to feel that he is stronger than the habit and quite capable of conquering it. This attitude can never be brought about through punishment nor does humiliation of the child serve any useful purpose. Punishing and humiliating the child are not only useless but also unjust. In order to establish a "dry habit" in place of the "wet habit" the child must be instructed how to overcome the "wet habit". The instruction should be of such a character as to appeal to the child and the introduction of an element of play in the effort to establish the "dry habit" will go a long way to ensure success. A simple chart ruled in such a way as to provide a square for each day of the month and on which a gold or red star could be placed on successful days will serve a very useful purpose not only as a record but also as tangible evidence of the child's success. Suggestion is a very powerful factor in the mental life of a child and through suggestion the child should be made to feel that the task is not only well within his power of accomplishment but also of accomplishment with ease and satisfaction. Consequently, too much should not be expected from the child at first. The results expected should be less than what is believed to be possible. That is to say, if a child is wetting the bed every night, he should be told that two dry nights would be considered as success for the first week. If he attains three or four or even two successes he is sure to start the next week with real enthusiasm as a victor and not as one vanquished. Such a state of affairs will inspire confidence and the child will go from success to success. The great thing is to anticipate success and never to advertise the child's failure to friends and neighbours.

The child should be given every encouragement to succeed. He should be told all the disadvantages that the habit entails both to himself and to his parents; the difficulty of his going on pleasure trips, excursions and visiting friends so long as this habit persisted, the difficulty of his participating in the various activities of life etc., and the advantages to be gained which are worth the extra effort needed to succeed in overcoming the habit, all these will add to the enthusiasm with which he will undertake the task. After the advantages, the disadvantages and the motives underlying the various measures have been explained to the child

in order to make him eager and anxious to conquer this undesirable habit, all conditions that promote this bad habit and those that militate against its conquest should be removed. For this purpose help from outside is necessary and the child's daily routine should be so adjusted as to place him under the best possible circumstances and surroundings to succeed. All mental strain should be avoided as far as possible and in order to render his nervous system as stable as possible, the child's hours in bed should be increased both at night and at nap time during the day. Putting the child to bed an hour earlier than his usual routine time, keeping him in bed for about half an hour later in the morning and lengthening his mid-day rest period by an hour, would mean much to an active child with a highly organised nervous system. Even if the child does not sleep all these hours, the rest will at least conserve his output of energy. The child should not only have regular hours of sleep but also proper diet and well-regulated toilet habits during the day. The diet should be a simple, bland one without any highly seasoned dishes. The intake of fluid should be restricted after 5 o'clock in the evening and the feet of the bed should be raised. Measures should be adopted to prevent constipation and to stimulate the free elimination of waste matter through the skin by means of exercise and baths. The child should be made to empty his bladder just before going to bed. The parents, having by keen observation, ascertained at what time the bed-wetting usually takes place, should awaken the child before that hour and make him evacuate the contents of his bladder. If necessary, he should be awakened a second time. An attempt should be made by the parents, preferably the mother, to sit by the bed side of the child just after he has retired for the night to try the effect of auto-suggestion by making him repeat over and over again the words: "I will get out of a dry bed in the morning".

Repetition of these words should be preceded by a few words of encouragement such as "how nice it will be to wake up dry and how happy you will be all day long in having won the battle". Such suggestions, comprising as they do of happy associations, are likely to make the brain respond to the sensation from the bladder more keenly.

Occasionally, due to an inherent weakness of the urinary system, a child may fail to respond to the above statement. Co-operation of the child and the parents in carrying out the above suggestion with the necessary alterations in environmental conditions including the tempers and general behaviours of parents invariably bring success which can be intensified and rendered permanent by approbation and inspiring confidence.

Biochemical Aspects of Mental Disorder*

BY

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THE object of this paper is to outline a few of the problems encountered by medical men dealing with mental patients, and whose solution seems to lie in the field of Biochemistry. Incidentally, a few biochemical achievements of recent years which have been of assistance to the psychiatrist are touched upon.

Any type of mental disorder can be considered as the result of the interaction of factors falling in four groups.

I. Tendencies inherent in the innate structure of the organism.

II. Tendencies associated with various ages, physiological events and epochs *e.g.*, those of the onset and cessation of sex life.

III. Tendencies due to traces of previous mental experience, recent or remote.

IV. Tendencies due to various physical agencies, such as fevers, poisons, inflammations, new growths.

So long as the traceable causes of a mental disorder are limited to factors belonging to one, two, or all of the first three groups, the mental disorder is said to be functional or psychogenic. It is said to be 'Organic' if the presence of a physical pathogenic agent can be observed directly, or can be deduced (1) from lasting changes of structure observable during life or death, or (2) from the presence of abnormalities of reaction such as fits or paralysis.

The significant relationship between biochemistry and mental disorder can best be considered with reference to each of the four causative factors mentioned above.

I. *Hereditary influence.*—Modern biochemical and clinical work on the influence of alcohol, syphylis, and achlorhydria on parents and siblings, has shown the need to modify Weissmann's principle that acquired characteristics can never be inherited. This

* Specially contributed to 'The Antiseptic'

modification generally termed the Law of Blastophoria can be paraphrased thus :—Germinal cells can under certain circumstances be injured, and this injury is transmissible. Biochemistry can help in this field by noting the influences of various types of diets, malnutrition and metabolic diseases, on the mental and physical equipment of the descendants.

A more important matter is, however, the knowledge of the chemistry of the genes and the chromosomes. A large number of mental disorders particularly what used to be formerly termed mania and melancholia, but now grouped under affective psychoses, are hereditary. It is a characteristic of these disorders that there flares up a biochemical explosion in patients who are apparently quite normal in between. The chemistry of these explosions have been studied and have helped to fill up details. But unless the chemistry of the chromosomes themselves are studied no fundamental results can be expected, nor can these affective disorders be effectively controlled or prevented.

Similarly in the group, 'Epilepsies', biochemical details influencing these fits have been observed. They are alterations in pH. value of the blood, oxygen lack, increased irritability and conductivity of tissue cells. But the key to these disorders is to be found in the alterations in the chemistry of the genes and chromosomes. Until they are investigated no real progress will have been made.

II. *Influence of various ages and epochs.*—1. Schizophrenia (formerly termed Dementia Praecox) is a disorder of adolescent life. It is characterised by a series of disconnections —emotional, intellectual, and those of conduct. A Schizophrenic speaks as if in dreams, and behaves as if he is a dreamer awake.

Biochemists, intrigued by defective oxidative processes in Schizophrenia, as shown by researches on glutathione and neutral sulphur content of the brains of such patients, and the associated lowered pH. value of the blood, of such patient carried their observations further. They found, however, the renal mechanism intact. By a series of brilliant deductions, it was concluded that an 'inert respiratory centre' was one of the factors responsible for Schizophrenic behaviour. The therapeutic value of these researches has been that stimulants to the respiratory centre like CO_2, dilute Sodium Cyanide which influence such patients favourably, are now in daily use in all Mental Hospitals.

Biochemists also found various irregularities in carbohydrate metabolism in these Schizophrenic patients, one important

observation being that they can stand enormous amounts of Insulin (100—200 units) without collapsing. This fact has been made use of in 'Shock' treatment of Schizophrenias by heavy doses of Insulin.

2. It is well known that the form and content of mental disorders are largely dependent upon the physique, sex and pre-psychotic personality of the patients. The thickest pyknic type is more susceptible to affective disorder, while the lean asthenic is more liable to exhibit Schizophrenic splitting. Physique and sex, reproduction and growth are in turn dependent upon the integration of the endocrine system in any individual. The following are a few biochemical investigations which have simplified many problems of temperament, character and constitution in relation to mental disorder :—

(*a*) The anterior pituitary was found to exert a controlling influence by liberating substances which either accelerate or inhibit the activity of other glands in response to the needs of the body. This is the view now held, a reaction to the former one that the pituitary produced an enormous number of hormones.

(*b*) Dodds next explained how this influence was exerted. He classified hormones under two headings. The first are complex protein bodies formed by the anterior pituitary, which act on other endocrine glands causing them to form the secondary type of hormones. These are bodies of comparatively small molecular weight, and most of them have been isolated in crystalline form, some having actually been prepared synthetically.

(*c*) The brilliant work of Harrington on the constitution of thyroxine, which is a phenyle ether of tyrosine, a relatively simple substance, confirms the view. Adrenaline is also a simple derivative of tyrosine.

(*d*) The chemical investigation of the composition and the intimate relationship between ovarian and testicular hormones, the oestrones and the androsterones, has led to interesting therapeutic applications. The substance extracted from pregnancy urine has been injected with successful results in cases of undescended testes. The male and female hormones closely related chemically, produce many overlapping effects. In fact, they do not appear to be strictly specific at all, a fact which has been noted with regard to several other hormones.

(*e*) That these gonadal hormones are derivatives of sterols has led to detailed investigation of the other members of the series with special reference to their capacity to stimulate growth, normal and pathological. A well known 'organiser' of the embryo is a sterol. Many carcinogenetic substances *e.g.*, methyl cholanthrene, are sterols. Bile acids are sterols, Here is a hint at explanation of the close association between gall stones and cancer. Many oestrongenic hydrocarbons, even the synthetic ones have been shown to act as organisers of the nervous system in the embryo. It might be of interest to note that the cardiac glucosides (digitalis, strophanthus) have a sterol base. Vitamin 'D' is a related sterol. At present the whole field is a dense overgrowth. Bio-chemistry can help by removing the weeds and clarifying the issues.

III. The organic and psychogenic etiological mechanisms are for the purposes of this paper grouped together, since they involve certain common theoretical considerations; particularly the chemical transmission of psychic and nervous stimuli, the relationship between the autonomic nervous system, the endocrines and the hormones. The following are a few relevent milestones in the acquisition of our knowledge.

1. The first one was the conception of an autonomic nervous system acting independently of the central nervous system. This was found to be untenable, because the complexity of functions and structure demanded a central control.

2. The modern idea is, that the autonomic is controlled by the diencephalon, which is closely linked up with the expression of the emotions. Since mental disorder is largely a matter of abnormal and sustained emotionality, whether psychogenic or organic, the importance of these concepts is evident.

The diencephalon is in close association with the cortex of the brain above, with the pituitary below, and with the sympathetic of which it is the head ganglion.

3. Hence, a psychical experience may record its effects either through the chemical mechanism initiated through the pituitary, or through the sympathetic acting on the viscera or other ductless glands. (Langdon-Brown).

4. It has now come to be recognised that the tears of sorrow, the dry mouth of fear and increased urination during periods of anxiety, are merely special instances of a generalisation that " the messages transmitted by nerves are ultimately translated by chemical messengers". Such behaviour, under the influence of emotions, but exaggerated and distorted, is the ordinary behaviour of mental patients, and the problem of a psychiatrist is often how to control such behaviour.

5. The next landmark in the history of medicine, the implications of which have not yet been sufficiently understood, has been the discovery by Lewis and Dale that Acetyl-choline is liberated not only when the post-ganglionic fibres of the para-sympathetic are stimulated, but also whenever a pre-ganglionic fibre, whether sympathetic or para-sympathetic, is stimulated. And that this Acetyl Choline is :—

(*a*) The chemical transmitter in autonomic ganglia ;

(*b*) The chemical transmitter of motor nerve impulses to skeletal muscle and that this action is increased in the presence of eserine or its derivate prostigmin. Since a large number of mental and neural syndromes are accompanied by abnormal muscle tone, the value and utilisation of this knowledge is only a question of time. Myasthenia gravis, a disease with reduction of muscle tone is already being treated by eserine. Catatonic states, narcolepsy, and cataleptic conditions remain to be investigated in terms of acetyl choline, eserine, and adrenaline concentration.

IV. Malnutrition is one of the primary etiological factors in the causation of mental disorder in India, and our knowledge of nutritional principles, the vitamins, and its therapeutic application to combat the consequences of such malnutrition is largely due to the work of bio-chemists. Malnutrition is responsible for abnormal mental states in two ways.

(*a*) Direct, producing the well known deficiency diseases associated with mental symptoms—Pallagra, Beri-beri, and nutritional anaemias.

(*b*) Indirect, by lowering the resistance of the individual in such a manner as to make him unable to withstand the ordinary stresses and strains of life.

1. The study of the development of the red blood corpuscle through its different stages megaloblasts, erythroblasts, normoblasts, reticulocytes, and erythrocytes has shown the need for specific chemicals at each stage. Castle's factor(probably a vitamin B, found plentifully in liver) is necessary for a change from megaloblast to erythroblast. Its absence is responsible for pernicious anaemia, sprue and various nutritional anaemias. While Minot and Murphy discovered the benefits of liver in these conditions, it is to the biochemists, we owe our knowledge of the underlying principle and for having made available concentrated liver extract for general use. For the erythroblast to develop into the normal R. B. C., iron, copper, and thyroid extract are needed. This knowledge also we owe largely to bio-chemists.

2. In depressive states, it is found that the capacity of the skin to produce Vitamin D is defective. Also the capacity to benefit from Sun's rays is diminished. This observation of the bio-chemists has resulted in the therapeutic administration of sensitising agents like Haematoporphyrin hydrochloride with benefit, in these depressions.

3. Another achievement of bio-chemistry is the recognition that in the adrenal cortex, Vitamin C is found in large amounts and that the cortical principle may either be Vitamin C itself or a simple derivative of Ascorbic Acid. This is of considerable theoretical and practical significance.

Disease of the adrenal cortex are usually associated with pigmentation until very recently, all such cases were fatal. In vitamin C, we may have a powerful drug to combat Addison's disease. Pigmentary abnormalities are also common in Vitamin B disturbances *e.g.*, pellagra. This overlapping shows the possibility of either complementary or overlapping effects of vitamins ; in the latter case throwing doubt on the specificity of vitamins just as scientists are now doubtful about the specificity of hormones.

The old distinction between endogenous hormones, and exogenous vitamins loses its validity, now that we know that the animal body forms Vitamin A from carotene, that it can synthesise its own Vitamin C and perhaps E, and that irradiation of the skin produces Vitamin D. Also, one is forced to the conclusion, that the activity of the vitamins and endocrines are largely conditioned by the capacity of the tissue cells to respond to them.

Wisdom Teeth and their Complications*

BY

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THE complications attending the mal-eruption of wisdom or third molar teeth vary from minor discomforts to very grave illness and even to death. The severity of these mishaps and the best way of treating them and the incidence of the complications are of interest to the Dental Surgeon as well as the General Practitioner.

Incidence.—*A perusal of Dental Journals and literature as well as private case records.* When a collection is made so as to get positive information when symptoms worthy of being recorded were observed, further symptoms which might have appeared without being recorded do not detract us from the impressive character of the tale of suffering. Both sexes are equally affected. No age is exempt. From the 14th year till 85th year of one's life it has been noted. Probably one fourth, 25%, suffer near 40 years or a little over. It has been known that many edentulous people were troubled by the eruption of wisdom teeth. But the commonest period for the symptoms to make their appearance is during the third decade of life, nearly 38 per cent The lower jaw is more frequently affected than the upper and the left lower seems to be more often troubled than the right lower though the difference here is less significant.

Symptoms fall into two main groups. The first contains those which are attributable to pressure or reflex irritation. This may make itself felt through local nerves or the tooth may actually impinge on the second molar and irritate its pulp causing toothache or neuralgia. The other group is the large group associated with pronounced and sometimes fatal septic infection. When subdivided again it falls into two groups: (1) spontaneous appearance of symptoms: (2) following an attempt at extraction. There is evidence not only of the danger of prolonged attempts with resulting trauma but also of grave risk from a perfectly simple extraction which is made through a septic area. The French

* Specially contributed to "The Antiseptic".

school divides the complications as mucosal and bony. The first group includes all inflammations of the gum and surrounding mucous membrane, with possible extensions to the tonsil, throat and lymph or salivary glands. These may be trivial, serious or fatal. The bony group includes cyst formation, periostitis and osteomyelitis; these cases are much less common than the mucosal group, but a far greater proportion of them constitute severe or dangerous illnesses.

The reason why the lower teeth figure so much more largely than the upper ones is the peculiar risk of partial eruption. An upper wisdom is generally either impacted or erupted but a lower wisdom is all too likely to erupt normally from the bone in a natural position and to be left with its posterior culps covered by the reflection of mucous membrane from the gum to the ascending ramus. The mucous membrane thus forms a hood over a portion of erupted tooth—a hood which the French writers describe as the "Capuchon", beneath which infection can track quite easily along the biting surface of the tooth. Once bacteria find their way under the hood they are in an ideal position for development and sooner or later a focus of infection inevitably follows. Local discomfort is caused but the whole condition may subside in a few days either because the general resistance of the patient is adequate or because the drainage occurs and the focus is destroyed. The little inflammation recurs, however, until the tooth is fully erupted or until some more serious development of the sepsis sends the patient to the Dental Surgeon. The developments of the complication of the mucosal hood include most severe phlegmonous and anginal infections of the mouth and throat spreading sometimes to the mediastinum, neck or cranial cavity and resulting not infrequently in dangerous illness or death.

Case records illustrative of the complications:—

1. *Extraction through a Septicarea*:—A man of 36 had an acute inflammation of gum round his wisdom tooth and was advised not to have it extracted at the time. He insisted on extraction, developed osteomylelitis and was ill for 12 weeks with an extremely swollen face, trismus and sinuses opening both on the cheek and into the mouth. The resulting sequestrum involved nearly half the thickness of his jaw and he was not well until five months after extraction.

2. A young man of 20 had a typical Ludwig's angina after a difficult extraction of a lower molar. He died from severe toxaemia, the whole floor of his mouth having rotted out with extensive necrosing cellulitis.

3. A man of 55 had an upper third right molar removed at his own urgent request. His pain increased and swelling extended to the right temple and ear. He died from profund sepsis following cavernous sinus thrombosis, cellulitis of the face, pharynx and mouth and multiple embolic abscesses of lung.

Severe bony infection.—1. Mocazar records 16 deaths as a result of infection starting round a wisdom tooth going on to periostitis and proceeding to such complications as cavernous sinus thrombosis, basal meningitis, suppurating pneumonia, oedema of the glottis, purulent mediastinitis, abscess or gangrene of the lung and cellulitis of the neck.

2. A girl of 18 came to Moulonguet in a really terrible condition having been suddenly seized with dysphagia and trismus when apparently in perfect health. She was gravely ill with foetid ulceration of the right tonsil and base of the tongue, which had arisen round a lower wisdom tooth which the author dared not extract while she was in that condition. After a month's energetic treatment, she recovered at the expense of a sequestrum which involved all the teeth from the first premolar backwards.

Severe soft tissue Inflammations.—A man of 27 had an enormous diffuse swelling of the soft palate, tonsils and pillars of the fauces, with intense trismus, embarrassed respiration, abundant and foetid salivation, rapid pulse and fever. The source of his trouble was an inflamed mucosal hood over the right lower wisdom tooth, the front half of which was carious. The trouble had come on in less than 24 hours; swallowing was impossible, the whole back of the mouth was disorganised and half a glass-full of foetid-pus was removed from the soft palate. The man was ill for a month but all his symptoms disappeared completely when the tooth was extracted.

Some terrible consequences have followed failure on the part of doctors and dentists to recognise the existence of these complicated eruptions.

One of the most tragic was that of a girl of 18 whose recurrent swelling due to deformed and impacted wisdom tooth was diagnosed as periosteal sarcoma. The tumour was excised but as the swelling, recurred she was treated with radium which left her with ulceration of mouth and a discharging sinus. She was threatened with another grave and disfiguring operation and only then her relatives did demand radiological examination which showed the cause. Unhappily the radium ulceration took nearly a year to heal.

A young lady had suffered for ten years from severe headache and occasional vomiting and the cause was diagnosed as tumour of the brain. But no optic neuritis was noted. Fortunately the radiologist who investigated her skull drew attention to a fully developed tooth impacted just below the coronoid process of the mandible. The headache disappeared after its extraction and never recurred.

A doctor suffered intractable pain in the lower jaw and tried many forms of treatment in vain, until Dechaume discovered a left lower wisdom lying horizontally and erroding the pulp of the second molar.

A female patient had twenty years' neuralgia on the left side of her face and her life was completely ruined. She had to stay in bed in an overheated room with her face wrapped in a shawl and every kind of treatment had been tried in vain. Only when she developed fever and trismus was a radiogram taken which revealed a horizontal wisdom tooth at the base of the coronoid process. She recovered completely when this was extracted.

A man of 36 who had rigidity and spasms of the muscles of the face and leg was diagnosed and treated as tetanus but was completely cured when a dentist who was called in extracted the upper left wisdom.

A young man of 23 suffered from sleeplessness, nervousness and pronounced Iritis. His teeth were radiographed and the films were presented to three successive oculists all of whom excluded them, treated him in vain and gave him a very bad prognosis so that he became extremely depressed and even suicidal. When a perfectly healthy but impacted wisdom tooth was removed from his left lower jaw, he showed signs of improvement in three days and was back to work again in four months remaining well upto two years.

A typist of 23 who had excellent teeth had suffered for two years from epilepsy and had been discharged from the hospital as hopeless. Her fits ceased when a badly impacted lower left wisdom eroding the second molar was removed.

Mental and Nervous complications—Cotton and Upson in America and Graves in England have drawn attention to the association between dental complications and the psychosis. Cotton observes that the only sign of impacted wisdom teeth may be rapid pulse in otherwise healthy individual. He describes a girl of 17 who became violent, destructive, excited, hallucinated and received every treatment without benefit. She slept well and talked

sensibly for the first time directly after the extraction of impacted wisdoms and subsequently recovered. A girl of 17 who was devoted to her parents lost all family affection and became maniacal. A boy of 16 became nervous and sleepless, lost all family affection and took to thieving. Both these young people recovered their normal mental state, on extraction of impacted wisdom teeth.

A lady of about menopausal age, developed severe asthma which threatened her life. Every conceivable kind of treatment was tried and eventually some benefit was obtained after the administration of ovarian and mammary extracts and a record of the case was published at this stage. She had severe recurrence, however and was thought to be dying until an impacted left lower wisdom was discovered so high in the ramus that it did not show the dental films. She recovered from the moment of its extraction and has remained well for over 11 years. We must fittingly apply to this case the words "on assista a veritable resurrection" which Lardennois and Ledereq used in describing the effect of extracting a malposed left lower wisdom from a woman of 25. Six weeks after normal confinement this patient began to suffer from sudden feverish attacks. During the third of these, she felt a sharp pain in the right wrist and was found to be suffering from osteomyelitis of the lower end of the radius. She remained ill in spite of many kinds of treatment; her condition became alarming and her pallor and arrhythmia made physicians suspect endocarditis. A septic focus was sought and after a long time was traced to the inflamed and suppurating mucosal hood over this tooth. She was fit again ten days after the extraction and remained well during three years of observation.

It is a well known fact that perfectly healthy wisdom teeth have been the cause of grave symptoms from their existence unerupted in the jaw. The cause of these complications lies either in a disharmony between the alveolus and the jaw or in some effect of the tooth germ. Hence developmental arrest resulting in the five types of bony impaction. At times it has been known to lie near the lower border of mandible or the upper border of the maxilla or the sigmoid notch.

The impressions in dental profession are that great majority of wisdom tooth complications might be averted by systematic investigation of the jaw of the school children and adolescents in order to ascertain whether or not the developing wisdom teeth are in correct position with a reasonable prospect of normal eruption. The age at which abnormality of the wisdom can be

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recognised is between 9 and 11. An aberrent wisdom in a child of this age should be watched by the dentist with the help of X-rays; if the position is bad he should extract the whole tooth follicle at the critical moment when the cusps begin to develop and before the crown is too large. At this stage extraction is an easy matter. If one is diffident he can extract the second molar in order to make room for the wisdom tooth to rotate and erupt in correct position. Intervention at this stage should serve most, if not all, of the dreadful complications which have been described. The one unforgivable sin is to let matters drift into one of the lurid pictures with which literature abounds.

CASES AND COMMENTS

Thyroidectomy Under Local Anæsthesia

BY

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I HAD occasions to see the operations done on Thyroid Gland both in India as well as abroad The general practice in England is to do operations under general anaesthesia preferably gas. In the Continent there is practice of performing them under local anæsthesia. Being in the rural hospital, I am handicapped in various ways. This difficulty is generally experienced by all surgeons working in the rural areas. The qualified anæsthetist is not available, the equipment is very meagre and other facilities are inadequate; so the problem of anæsthesia worries every head. The energies of a young Doctor are doomed to despair, when he finds no one to assist him satisfactorily in operations. He has, therefore, to devise plans according to environments. If he keeps up his spirit, he can be successful even in these adverse circumstances. Necessity is the mother of invention. Notwithstanding these impediments, the surgeons have made great strides in the rural areas of our Province. They have done huge mosaic work though they have to strain their nerves to accomplish their ends. Overwhelmed with such circumstances, I thought of trying local anæsthesia in Thyroid Operation. Certainly, it is no new discovery, but personal observation following the dictates of elders. I imagine, if local

anæsthesia is extensively tried in this country, the operation which is now considered a havoc, will be much simplified.

I cite two cases operated by this method.

Case No. 1.—A patient named Mohammed, aged 30 years, was admitted on 10-1-36 for "Cystic Goitre" of the right lobe. The swelling was round in shape, situated on the right side of the middle line of the neck. It was of an orange size and moved with deglutition. It was regular and soft in consistence. The skin was freely movable over it, and the cervical muscles were not adherent. The Lymphatic glands were also not involved. There was no other sign of malignancy. The operation was performed and a localized adenomatous growth was enuecleated from the substance of the right lobe. The growth was subsequently sent to the Pathologist, Lahore. He proclaimed it to be a "Cystic Adenoma". There were no toxic symptoms but certainly he would have developed such symptoms, had he not been operated for sometime to come. The patient made an uneventful recovery. The wound healed by first intention and the patient was fit for labour after 10 days.

Case No. 2.—A patient, named Sardar Khan, aged 28 years, was admitted on 10-10-36 with a swelling in front of the neck situated on either side of the middle line below the Thyroid Cartilage. It was as big as an apple, semisolid, irregular, nodular and moved with deglutition. It was not adherent to the surrounding structures nor to the overlying skin. The Cervicle Lymphatic glands were not involved nor was there any other sign of malignancy. His pulse rate was above 100 per minute. There was slight degree of Tachycardia and breathlessness by exertion. There was no tremor of hands nor any ocular signs, except slight exophthalmos. The græfes and other signs could not be elicited. The patient was put on Ingol's solution minims ten three times a day. He was given complete rest on bed and put on light diet for a fortnight. This improved his general condition, vigour and energy. His pulse rate improved and tachycardia was lessened. I therefore decided to operate upon and removed about $\frac{1}{4}$th of the gland by usual surgical technique. The excised gland was sent to the Pathologist, Lahore, who proclaimed it to be a "Colloid" Goitre".

The drainage tube was kept for 48 hours at each end of the wound and boric fomentation was applied twice a day. The convalescence was a bit tedious and protracted on account of

infection of the wound. He was in hospital for over a month and was discharged cured.

I have re-examined him on 20-2-37 and found him quite hale and healthy. He has put up weight and increased in vigour. His pulse rate and cardiac beat have come to normal and he feels spirit to work.

The account of these two cases will convince the readers about the efficacy of infiltration anæsthesia and it strikes to my mind that if it is given a fair trial, it will come up to perfection.

Technique.—The writer uses 5% solution of Novocain. About 100 c.c. of the solution should be ready in hand and about one c.c. of Adrenalin Chloride Solution (1 in 1000) is added to it which enhances its anæsthetic action and is also beneficial for its hæmostatic and stimulant action. The solution is injected subcutaneously by 10 c.c. record syringe, over the prominence and the surrounding area of the tumour. The needle is either withdrawn and reinserted or pushed to the deeper structures without pulling it out and another ten c.c. of the solution is injected into the deeper tissues. The needle is now withdrawn and the skin is softly massaged for about a minute to hasten absorption. The writer dissects the skin now and if he can painlessly incise the superficial fascia and platysma, he does it unhesitatingly; otherwise, he pours a few c. c. underneath the deep fascia. After the deep fascia etc. are incised and the gland is exposed, another few c. c. of the solution are injected into the capsule of the glands, which is also opened now. The blood-vessels of the gland are ligatured and a few c.c. of the solution are injected into the substance of the gland. This makes the partial excision of the gland easier and painless. The operation is completed by suturing the wound in layers, and the drainage provided if necessary.

After-Treatment.—I do not wish to be led astray from my main thesis and do not indulge into the detail of the operation but I am inclined to say a few words about the after-treatment.

In partial lobectomy, the mouths of all the channels are cut open on account of which the thyroid secretion freely pours into the wound and is liable to digest the wound by its tryptic action, so it is advisable to drain the wound at both the corners as to enable the secretion to flow out of the wound without damaging it.

The drainage is kept till the mouths of the lymphatics etc. are sealed. This requires 48 to 72 hours. The deep fascia of the neck is continuous with the pectorl fascia, so the infection if occurs, is liable to extend down to the ventral aspect of the chest.

The writer therefore treats the wound with boric compress, and if the infection appears to spread, free incisions are advisable.

Conclusion.—I have merely tried to suggest my own point of view. Our profession is more than a trade, it is our life, an expression of our humanity. The course we adopt should be for the benefit of our patients and we should do it to the best of our ability and judgement. Safety of the patient is our motto. We should adopt means to achieve this end. The world is towards advance and we should not lag behind.

Rontgenoscopic Appearances

As seen six years after the healing of a case of childhood type of lung Tuberculosis

BY

Rai Bahadur Dr. G. C. Chatterjee, M.B., (CAL.), F.R.I., (LOND.),

Calcutta.

THOUGH Rontgenoscopy when applied to unravel mysteries of tuberculosis of lungs, has tended more to create confusion than clearing the diagnosis, amongst a certain class of medical men who do not know that healed and active lesions cannot be made out without the help of clinical data, and so do not examine their cases clinically as well, yet it can be said with certainty that when X-ray film is considered along with clinical findings which include examination by auscultation, percussion and palpation, it has clarified to a much more marked extent, the phenomenon of tuberculosis than would have been possible in pre-X-ray days. This applies more specially to childhood type of tuberculosis than to adult type. In the former type, the hilar glands being the chief seat of affection with occasional extension into the lung and running a very chronic course, as much as 6 or 7 years, and presenting very little symptoms all the time, except occasional fever and cough and a certain amount of retardation of growth of the child, and the case healing as a rule if handled properly, X-ray has shed a great amount of light for study of this type of disease and so had lead to successful treatment of them. Otherwise these would not have been detected at all but died by wrong treatment. As this childhood tuberculosis leads to immunity which prevents the party getting acute phase of the disease, when he gets the infection in adulthood, in contrast to those who were not so

affected and so get the acute type, it has led also to the knowledge of immunity in tuberculosis much more thoroughly than we could hope to get it before. So, to illustrate this point, the text book writers on tuberculosis, represent serial X-ray films, taken from individual children, at intervals of six months or a year or so, and that extending for over so much as 7 or 8 years, showing extensive perihilar lesions, with occasional allergic inflammation spreading into the lungs. A recital of a case of this type, though the X-ray film of which during the active phase occurring six years previously, was not taken and is not available for comparison, yet as the case report of that period is available and if compared to the film taken at the present time (6 years after) showing healed remnant of old perihilar infection with extension into the lung, will not be uninteresting.

Case No. 109. In February 1931, this patient, a girl aged 12, was brought from Karachi for treatment to my clinic. She was suffering from enlargement of the cervical and submaxillary glands of the size of a goose's egg with cough and slow fever ranging between 99° to 100°. History elicited the fact that her mother died in February of the previous year, after protracted illness, at first evidently from tuberculosis of spine spread over 7 years (undiagnosed), then latterly of open lung tuberculosis accompanied with high fever and diagnosed at first as typhoid by Widal's test and then tuberculosis by sputum examination. Examination of the girl showed that the apex of the right lung was affected. Dullness and crepitatians were audible. As sputum was not available, von Pirquet's test was done. It gave positive result. After preliminary rest which brought down the temperature, a course of tuberculin as an ambulant case was given. The physical signs along with the glands disappeared. Weight increased from 64 lbs. to 98 lbs.—a gain of 34 lbs.

From that period, up-to-date, (6 years,) (see case report) she has remained in good health and has been studying and has passed the Matriculation Examination. At one time she had an attack of benign tertian malaria, which passed away with administration of quinine.

In May 1937, she presented herself before me to be examined whether she has got any trace of her old disease. The only complaint from which she was suffering at that time was slight diarrhoea. Physical examination showed no trace of the gland. Examination of lung showed no adventitious sound—only the right apex showed marked deficiency of respiratory sound in

comparison with the left lung. An X-ray film was taken to find out whether there was any cicatrical remnant of her old complaint.

X-ray film—right arch of diaphragm markedly elevated in comparison to the left. Marked extension of hilar shadow in the right. Lung tissue—*on both sides normal*, only a patch of cicatrical tissue can be made out at the junction of middle and lower lobes of the right lung.

Remarks and conclusion.—1. A case of tuberculosis of cervical and submaxillary glands and lung is seen 6 years, after the active phase, in perfectly healthy condition.

2. X-ray film of lung shows evidence of the old lesion which includes hilar affection, which was not detected nor even suspected before.

3. The marked loss of respiratory sound in the right apex now found, suggesting healed lesion, could not be detected by X-ray.

Synopsis from the case report :—

Case S. 109 Plate No. XIX.

Gland and Right Lung, 1931.—Girl aged 12.

Family history.—mother died of tuberculosis of lung.

Complaint.—loss of appetite, emaciation, cough and fever

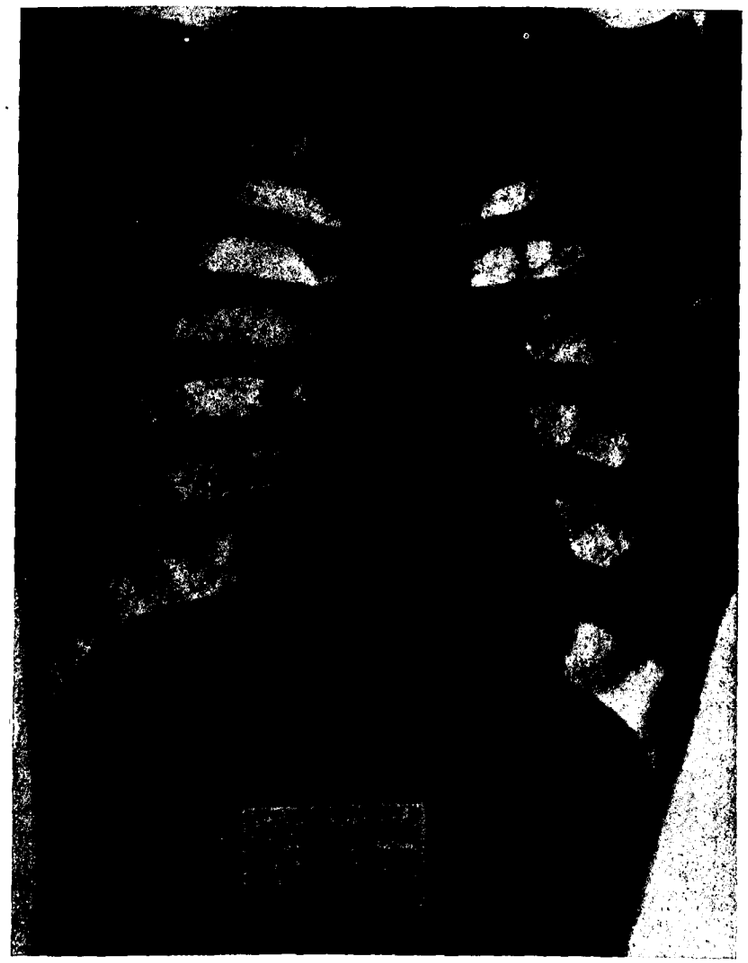
Result of examination.—cervical gland enlarged. Right apex-dull and adventitious sounds audible.

February 1931.—temperature ranging between 99° to 100°. By rest for two weeks—normal.

February to July 1931.—A course of tuberculin given. No more fever, gland subsided, weight increased so much as 34 lbs. (from 64 lbs. to 98 lbs.). In April 1937.—saw her healthy, symptomless, has grown up. X-ray photo taken on 30-5-37, out of curiosity whether any remnant of old lesion could be found.

Rontgenoscopic Appearances as seen six years after the healing of a case of childhood type of lung Tuberculosis

By Rai Bahadur Dr. G. C. Chatterjee, Calcutta.



CASE S. 109 PLATE NO. XIX.

Shows marked enlarged perihilar shadow on the right side. Arch of diaphragm right side elevated. A cicatrical patch can be seen at the junction of the middle and lower lobes of the right lung.

To Face Page 1166]

Secondary Cataract Treated by Medicine

BY

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Ophthalmic Surgeon, Bikaner

Out of the several secondary cataract cases treated by me with Trachomine with excellent results, I beg to describe only one typical instance giving its full details which are as follows:—

Mr. A.—Hindu male, aged 54 years, came to consult me about his eye trouble. According to the history given by him, he had a cataract operation with capsulotomy done on his right eye some three months back. After about two months of the operation he was advised by several eminent ophthalmic surgeons to get a needling operation done, to which he did not agree. During all this time he had been using gutta Dionine 5% solution morning and evening.

Condition on first visit.—R. V. Hand movement only. There was a thick capsule and organised cortical matter covering the whole of coloboma, the lower portion being thicker than the upper portion. As operative interference was out of question, I advised him to use Trachomine (prepared by the Trachomine Pharmacy, 3097 Pipal Mandi Agra. U. P.) and to return after a fortnight.

Condition on second visit.—Sight improved from hand movements to counting of fingers immediately in front of eye. The upper portion of the capsule showed a little clearing up.

Condition on third visit.—Sight improved to fingers at about one meter. A little more clearing up of the upper part of coloboma also noted. Like this the sight of the right eye gradually improved and the lens capsule and cortex matter got absorbed steadily. I saw the patient again about ten days ago and the condition of the right eye was:—

Vision 6/9 partial with correction. Upper part of the coloboma is clear and in the lower portion a thin tag of capsule still persists, but does not interfere with vision, being right at the bottom. The patient can read newspaper comfortably with correction. All this treatment took a little over four months.

I have also been using Trachomine extensively in my private and hospital practice for the treatment of the persistent post-operative conjunctivitis which rapidly yields to it in about two weeks' time only instead of four to six weeks as is usually the case with other medications. Indeed it is a very valuable remedy in the treatment of trachoma and spring catarrh and the most striking results have been noted in cases of conjunctivitis of children, with chemisis of lids, which yield to this medicine like magic.

I am now intending to try it in cases of infantile morgagnion cataracts: but such cases present themselves very seldom. I, therefore, request your readers through these columns to kindly throw some light on the uses of Trachomine in cases of infantile morgagnion cataracts and oblige me by thus facilitating my work.

Pruritus Ani.

Dealing generally with treatment, O'Donovan (London) says that for the simpler cases the anal skin may be painted with a solution composed of 1 per cent. malachite green and 1 per cent. mercuric chloride in 80 per cent. alcohol, while a mixture containing potassium bromide 12 grains, aromatic spirit of ammonia 30 minims, oil of cajuput 2 minims, and infusion of valerian to half an ounce is given three times a day after meals. This treatment will give complete relief in three weeks. For more severe cases x-rays, one-third erythema dose, repeated in a fortnight and if necessary again a month later, will cure four-fifths of the patients. Application of liquid tar is also useful, or chloral, camphor, and menthol (equal parts) may be rubbed on occasionally to afford relief.

Many cases of severe pruritus ani exist for which no causative factor can be found, and in which ordinary treatment is ineffective. For such cases Haskell and Smith (Philadelphia) recommend subcutaneous injection of 70 per cent. alcohol. A small portion of the skin is anaesthetized by injection of procaine hydrochloride, after which the alcohol is injected. From four to six such treatments are necessary, requiring a quantity of 15-20 c.cm. of alcohol. Of twenty-two patients so treated, sixteen secured complete relief and four were made comfortable. No serious complications were encountered.—*The Prescriber.*

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EDITORIAL

Exit L. M. Ps

AT long last and after a strenuous struggle for over quarter of a century, both in the Medical Press and in the medical platforms, exit the L. M. Ps. from the Madras Presidency at least, never more to be re born in any shape or form in the Medical World. The credit goes entirely to the Doctor-Minister, the Hon'ble Dr. T. S. S. Rajan, who has recently officially announced that, on and from 1st April 1938, there will be no more recruitment for the L. M P. Course, that there will be only one Medical Course thereafter *i.e.* the M. B. B. S. Degree of the Madras University, that the Madras Stanley Medical School and the Vellore Medical School will be raised to the status of a College and that the Willingdon Medical School for Women in Madras will be abolished. Orders have been issued for applications being sent to the Madras University for the affiliation of the two new Colleges to the University. Madras has thus given the lead for the other sister Provinces to follow, and we take this opportunity of congratulating the Hon'ble Dr. T. S. S. Rajan, for taking courage in both hands to remove this age-long cancer which has been the cause of unnecessary rancour and bitterness among the members of the Medical Profession in India.

While there is widespread rejoicing and jubilation among the L. M. Ps, there are signs of discontent still discernible in some quarters, which require to be removed. There is a genuine feeling

that medical education would henceforth become more costly, which might shut out a good number of deserving but poor candidates from pursuing. This fear, we think is unfounded. From the Government Communique, we gather, that no great additional outlay will be invested in converting the two schools into colleges. More honorary men with a small teaching allowance will, in all probability be associated with these two institutions and therefore the expenditure is not likely to run high, necessitating the raising of fees. As more and more doctors are wanted to serve the needs of the rural population, medical education ought to be made much cheaper. We trust the Government will take note of this and order the reduction of the fees in the Madras Medical College to the level of those prevailing in the Medical Schools

Now, the questien arises: what is to become of the existing L. M. Ps? The University of Madras have laid down certain rules by which the L.M.Ps, are enabled to appear for the M. B. B. S. examination and obtain a degree. These rules are so rigid that only a few can take advantage of them. The number of L. M. Ps. so far converted is neither large nor alluring. We would suggest, therefore, that these rules be relaxed a bit, so that a larger number of L. M. Ps. may avail themselves of this facility.

We have been fighting all along in the columns of *The Antiseptic*, for the extinction of the L. M. P., or his elevation to the status of a degree holder. We are glad, our labours have been crowned with success, at least in our Presidency. We hope other Provinces will follow suit and see that this caste distinction among medical men is wiped out.

GLEANINGS FROM MEDICAL PRESS

Medicine and Therapeutics

The Treatment of Tuberculous Cavities.—*Dr. H. Ulrici*, Tuberkulosenkrankenhaus of Berlin, Sommerfeld. (Deutsche med. Wschr., No. 15, 1937.)

The writer describes the formation of cavities with pulmonary Tb. as second disease because, owing to the possibility of dissemination, a new phase of tuberculosis begins with the softening of a pulmonary focus and its breaking through into the bronchial space. The new form of the focus offers a verily passive resistance to continued conservative treatment and our therapy must break this resistance; the medical task becomes a surgical one. This is urgent because of the imminent danger of bronchogenous

dissemination and because a patient with a cavity represents a danger to the community and is usually, at the same time, incapable of work.—We distinguish generally between early and late cavities. With screen examination a typical early cavity shows a thin marginal zone but a broad margin does not necessarily prove that it is a cavity of long standing which has developed gradually and has gradually increased in size. Unfortunately we cannot, so far, recognise either by X-ray examination or clinically whether the broad margin of a cavity consists of young granulation tissue which is still capable of resolution or of rigid, unyielding older connective tissue. The best information as to the origin of cavities and the nature of their walls can be procured by serial X-ray pictures of the whole duration of illness, but such series are rarely at our disposal. Very large and still more giant cavities are always of older date; in the same way a system of cavities proves that there is a process of long standing. The same is true of a remote daughter-cavity which, itself, may naturally be quite recent. The age and consistency of the walls of a cavity are of decisive importance with regard to prognosis and therapy.

There are still individual writers who speak in favour of waiting and conservative treatment of cavities. An early and even, although more rarely, a late cavity, may certainly become regressive without artificial pulmonary collapse. But the danger of this failing to occur is too great. Cures which have been reported did not hold out against criticism. In the well-known book of *Turban* and *Staub*, for instance, the writers refer to only a low percentage of cases where cavities were healed and these had taken 2—4 years of high altitude treatment. We have, however, no means of ascertaining whether a cavity is going to heal or to disseminate. Neither open air treatment nor strict rest in bed protects from dissemination or severe hæmorrhage. Only recently a patient with a small fresh cavity was admitted to the writer's institution and just before the intended pneumothorax was done, he had a severe pulmonary hæmorrhage with bilateral aspiration pneumonia. After many bad experiences with patients who refused the pneumothorax treatment, the writer has adopted the standpoint of refusing, in every case of cavity, a conservative treatment and any expectant attitude. There is no reason for delay. Neither can it be admitted that the patients must first become acclimatised; such labile patients should not in any case reside at a high altitude with its irritative effect which may have a good influence on them when the process has somewhat calmed down and has become atoxic. Only in cases where it is

not possible to judge immediately whether the heart and the lungs will stand the collapse treatment which, in the case in question, must possibly be bilateral, should the patient's capacity for recovering first be put to the test although this means taking the responsibility for the danger of an aggravation of the condition. Anyhow the pneumothorax treatment should always be carried out as soon as possible. No results worth mentioning have been attained, in processes of cavity formation, either with specific or non-specific irritation therapy: treatment with X-rays has also been more and more abandoned. Even if the expectoration of bacilli is occasionally removed by rest cures at high altitudes continued for months, it returns in a short time if the patient returns to low altitudes. It is quite a different thing whether an affected lung is put more or less at rest by a rest cure even lasting 6—8 months or whether it is thoroughly put out of action for two, or better for three years by establishing a pneumothorax.—It should, however, be emphasised that the decisive importance of the collapse treatment lies in a really thorough immobilisation, especially of the area where the cavity is seated. It is not enough that there is a small pneumothorax at some point or other which exercises no influence on the cavity: neither is it of any value if it surrounds the cavity but this cavity remains distended owing to cords. In cases of this kind a complete relaxation of the cavity should be attempted by dividing the cords by cautery, if necessary by a supplementary exhairesis of the phrenic nerve. If the desired end is not reached even by these measures, an operative method (see below) is indicated. Too severe compression of the lung is unnecessary and may even be harmful because it leads to the formation of an exudate; the mere relaxation suffices. Pneumothorax treatment in out-patients should be rejected; even an expert cannot foresee what complications and reactions may possibly occur on the part of the pleura or the whole body. It is only when it is applied clinically and when the indication is strictly established that no serious complications need be feared Anyone who dares to make an attempt with seriously ill patients will repeatedly experience that no relaxation of old and rigid cavities or systems of cavities can be achieved whereas caseous processes will easily perforate into the pleural space. The writer has therefore become more cautious with the collapse treatment of phthises of long standing, especially with bilateral cavernous processes, and prefers in cases of acute exudative processes to try to paralyse the diaphragm by means of exhairesis of the phrenic nerve which has a mild effect and involves no danger to the pleura. The former comes, moreover, into consideration as an independent operation with cavernous processes localised exclusively in the inferior lobe, further with elderly patient for whom a major operative intervention which, in itself, would be indicated, might be a too great demand. The distrust of exhairesis of the phrenic nerve is not justified. The writer was able, after a lapse of from 8—15 years to demonstrate permanent cures in 25% of the phthisics with cavities who had been treated solely by the paralysis of the diaphragm.

If burning through the cords, possibly with the added help of exhairesis of the phrenic nerve fails to produce an improvement of the pneumothorax or if, from the beginning, pneumothorax cannot be done on account of total pleural adhesion, shrinking of the cavity can only be brought about by major operative intervention, *i.e.* thoracoplasty or filling. Indication and technique of these operations have been established in the past 20 years. The operative procedure in the individual case should be resolved upon after a careful analysis of the process of disease, especially in respect to the site and size of the cavities (stereoscopic X-raying, X-ray picture at various depths), after a functional test of the heart and lungs and after making sure that there are no complications (intestinal tuberculosis). The superior thoracoplasty elaborated by *Graf, Schmidt* and others makes it possible in a large number of cases to avoid total plastic operation. Astounding results are said to have been achieved with a new operative method, an extrapleural operative pneumothorax which is, however, not yet sufficiently tested. Paraffin filling and olethorax seem to have fairly frequently a tendency to late perforation and have been less frequently used in recent times.—By re-examination of the surviving patients, the writer investigated the results of the treatment of cavities at his institution; chiefly seriously ill phthisis were concerned. In 30 % permanent cures were noted. This result is far more favourable than has been generally surmised up to now. There can, moreover, be hardly any doubt that cures have become even more frequent in the past few years owing to early operation and improved methods.—*Ars Medici.*

Nervous Diseases Due to Avitaminoses.—Doc. *H. Hoff*, Univ. Nerve clinic, Prof. Potzl, Vienna. At a meeting of the Assoc. of Neurol,, Warsaw. (Wien. med. Wschr., No. 23, 1937.)

In these days, we distinguish vitamins from A to J, the B group alone having 7 types and, in addition, Castle's extrinsic

factor which is an anti-anæmia vitamin.—A-deficiency produces xerophthalmia and occasionally combined degeneration of the tracts in the cord which is, in a far-reaching degree, reminiscent of funicular myelosis in pernicious anæmia, finally, at times, disturbances resembling those due to ergotism. Vitamin A is a direct antagonist of tyroxin; the growth-promoting effect of A can be nullified by tyroxin; poisoning due to thyroid substance is mitigated by A. Thyroidectomised goats yield a yellow milk because they are not capable of transforming carotin into vitamin A. A-deficiency decreases the immunity to infections. Therapy: green salads, spinach, carrots, codliver oil, Vogan, etc.—B_1 is the antineuritic vitamin, the only one which contains sulphur: a lack of it leads to polyneuritis owing to a disturbance of the water and carbohydrate metabolism in the nervous system and the heart, (Therapy: yeast, liver, heart, kidney; Betaxin, etc.). B_2, the growth-promoting factor, has also been named Lactoflavin because it imparts a yellow colour to milk: it exists chiefly in the liver and plays a role with the act of vision, in the retina A lack of B_2 causes signs of motor irritation, spasms, hyperreflexia, general muscular weakness, sleeplessness, depressions, trophic disturbances.—Vitamin C (ascorbinic acid, Cebion, Cantan) and vitamin D (Viosterol) show, in animal experiments, no direct effect on the central nervous system. In contrast to parathormone. D promotes the deposition of P and Ca in the bones.—E is the anti-sterility vitamin. A lack of H entails dermatoses.

With D supervitaminosis (Viosterol intoxication) a considerable rise of the cholesterin and calcium level in the blood takes place; the bones are decalcified, the bloodvessels calcify. Rabbits used for the experiments die in convulsions; their brains show typical senile changes of the ganglion cells and thickening of the cell membranes. The capacities of adjustment and substitution of the ganglion cells are decreased in function.

For lead and mercury poisoning, vitamin D (also prophylactically) is recommended. B_1 (Betaxin) is ineffective in acute polyneuritis of juveniles, fresh sciatica etc.; it can, on the other hand, prove strikingly efficient in polyneuritis if the anamnesis shows a diet poor in vitamins and if the skin has a peculiar, yellowish-grey colour, further in addicts to alcohol, especially if combined with B_2 or injections of Campolon (even with normal findings in the blood), which is very rich in B_2. With funicular myelosis also, B_1+B_2 should be given, further for reinforcing fever therapy (a large amount of B_1 is used up in fever) and physical methods. Three cases of polyencephalitis haemorrhagics superior (*Wernicke*)

which has hitherto always proved fatal, have been cured by treatment with Betaxin (2 c.c. daily) and Cebion, continued for several weeks. With herpes zoster, the pain is removed, the efflorescences heal more rapidly and with a slighter formation of scars by treating the patients with large doses of Betaxin (2—3 c.c. daily). We can, however, hardly hope for successful results from the use of vitamin therapy with disseminated sclerosis and tabes.—*Ars Medici.*

Cardiac Insufficiency.—Three important measures: (1) reducing the demands on the heart, chiefly by rest; (2) increasing the functional capacity of the heart by digitalis preparations; and (3) removing resistances in the circulation, in the first by dehydration.

Digitalis treatment is often insufficient to save a patient whose heart is very weak, therefore devote more attention to the two other demands, especially rest for the heart. A patient of 18 with cardiac defect and severe decompensation showed no marked improvement in spite of having been treated with cardiants for several weeks. One night the man, who suffered from oædema and cyanosis, began to rave in an attack of anoxæmic confusion and could only be calmed by an intravenous injection of pernocton. After that he fell asleep and slept 36 hours but when he woke up, not only his condition of anoxæmic confusion but also his dyspnoea had disappeared and from that time he made such quick progress that it was soon possible to entrust him to the care of his family.

The writer treats cases of cardiac decompensation with soporifics and the rectal administration of digitalis and euphyllin. Sleep is promoted by giving 0.1 gm. luminal three times daily; this dose can soon be reduced by half, as long as the patient slumbers lightly both day and night. The room must be kept quiet. Occasionally a small dose of morphine is given to abort attack of cardiac asthma. Dieting is of minor importance as the patient only requires a minimum of food. Digitalis and euphyllin are given per rectum in order to disturb the patient's rest as little as possible and not to excite him by intravenous injections, etc. For the same reason the writer gives the daily dose all in one, in a single suppository.—*H. Kutschera von Aichbergen, Med. Klin., No. 49, 1936*

Powdered Vegetables in Treatment of Anæmia of Infants.—The blood of a group of twelve infants, ranging in age

from 6 to 19 months, who suffered from anæmia of varying intensity, was examined by Rubini, Parma, before and after administration of a preparation of powdered vegetable. The group included infants fed on mother's milk as well as on artificial or mixed diets. The administration of powdered vegetables added to the diet resulted in increasing the hæmoglobin and the number of erythrocytes, the globular value and the globular ratio. The leucocyte formula showed only slight modifications, the lymphocytes being slightly increased at the expense of the neutrophils. The improvement in the blood depends on the supply of mineral salts and vitamins contained in the powdered vegetable preparation. The treatment is of value in controlling and in preventing anæmia in infants.—*Lattante, Parma, 8 : 1-72, Jan., 1937, p. 35.*

Treatment of Tapeworm.—The scolex or head of the cestodes or tapeworms has from two to four suckers and may also be provided with claw-like curved hooks. The tapeworm thus fastens itself to the intestinal wall.

Tænia saginata, the beef tapeworm, has a head about 2 mm. wide with a flat crown and four large suckers. This worm may have from 200 to 450 segments and is often from 2 to 4 metres in length.

The treatment consists in the administration of an anthelmintic drug by mouth after preparation of the patient. The patient should take a light diet for two days. A large enema of cold water or a thorough saline purge should be given. No breakfast should be taken on the day the drug is administered. The best remedy is perhaps pelletierine, which is not suitable for children and is expensive. The dose is from 0.26 to 0.5 gm. (4 to 8 grains) with 0.3 gm. (5 grains) of tannic acid in sweetened water. For children the oleoresin of male fern is best. Four doses of 15 minims (0.9 c.c.) each in capsules is given at intervals of an hour, followed by an active purge. The dose required can be considerably reduced by giving it through a duodenal tube, thus reducing the danger of toxic effects. Pumpkin seeds, kousso, powdered kamala, and thymol are also used.—*Medical World, Aug. 1937, pp. 19.*

Toxin Formation in Burns.—Extensive burns produce systemic disturbances of which the causation is not well understood. A state of acute toxæmia begins between 6 and 50 hours after injury, and not infrequently proves fatal after about 70 hours. Clinical and pathological studies strongly suggest formation of

toxin or toxins in the burned tissue and absorption into the circulation. There is also some evidence from experiments on animals. As long ago as 1876 Avdakoff reported that the blood of a burned animal was toxic to healthy animals. In 1905 Pfeiffer published experiments showing that the urine and blood-serum of burned rabbits was toxic. But more recent writers—Underhill and Kapsinow—could discover no significant difference in action between extracts of burned skin and extracts of normal skin, nor between blood from burned animals and blood from normal animals. W. C. Wilson, J. S. Jeffrey, A. N. Roxburgh and C. P. Stewart, of the Department of Surgery of the University of Edinburgh, have shown that toxin is generated in burned tissues.

Under ether anæsthesia they made an incision in the middle line of the abdomen of rabbits, dissected up skin with subjacent platysma muscle as two lateral flaps, applied heat by diathermy to the deep surface of the flaps, and closed the incision. The animals subsequently showed no untoward symptoms. After varying intervals the œdema fluid which accumulated was collected and injected into the ear vein of rabbits. Fluid removed 4 hours after the injury was always innocuous. Fluid removed at longer intervals was more and more toxic and at 48 hours highly toxic, killing 40 out of 44 rabbits. Sometimes convulsions and death supervened within a few seconds of injecting 3 to 5 c.c. In other cases after several minutes muscular weakness, laboured respiration, increased heartrate, pallor of the ears and mydriasis developed. The weakness increased, the temperature fell, and death occurred after 1 to 5 hours, sometimes preceded by muscular twitchings or general convulsions. Subcutaneous injections were also toxic but the lethal dose was larger. The fluid was found sterile; therefore bacteria played no part in the result. Autolysis of the injured tissue was evidently the mechanism of toxin production. In the fatal cases fatty degeneration of the liver-cells was found.—*The Clinical Journal, July, '37.*

Blood-Films in Lead Poisoning.—Dr. Robert Craik points out that the extended use of lead in the metal, rubber, electrical and other industries should make lead intoxication commoner than ever. The final report of the Committee on Ethyl Petrol shows that normal urine contains lead and that the lead hazard is omnipresent. Thus early diagnosis connot rest on laboratory reports of a trace of lead in the urine, but must depend on symptoms even less marked than formerly, and on signs amongst which the blood changes alone remain important. Since the war workers

have had dental treatment and clean their teeth more regularly, so that the typical blue line is seldom seen, and must be looked for with a lens in a good light. It indicates lead absorption, but if excretion is adequate the worker remains healthy. In plumbism of domestic origin the blue line is often absent, and in mild cases diagnosis is uncertain. But the blood-film makes us independent of the blue line in diagnosis.

In pernicious anæmia the marrow is greatly altered, and punctate basophilia and other changes in erythrocytes are evidence of pathological regeneration. In any serious anæmia with failing normal regeneration we expect the onset of the pathological process to meet the emergency. But in early plumbism there is no anæmia, yet pathological regeneration—which is not needed—precedes all other symptoms, and is evidence of reaction of marrow to small doses of lead. The changes are both nuclear and cytoplasmic, and as long as the marrow is capable of normal regeneration there will be pathological regeneration too, if there is lead in the blood. In the course of normal regeneration every corpuscle enters the circulation more or less polychrome, and for the first few hours is a reticulocyte, but within 24 hours it becomes mature and loses its polychromasia. If the demand is urgent, polychrome erythroblasts also appear, but become normoblasts in 24 hours.

Pathological regeneration is well seen after giving lead acetate 1 gr. thrice daily for 10 days. Polychromes, and therefore reticulocytes, are increased; many are larger, and some show basophil punctation, which persists for 24 hours after polychromasia has disappeared. Nuclear changes appear at the same time, often in the same corpuscle. Some polychromes show azur (Cabot) rings or arcs, which also survive polychromasia, and are evidence of pathological regeneration. Commonly punctation is seen in 1 in 1000 corpuscles, and perhaps in twice this number; rings are usually less numerous.—*The Clinical Journal.*

Insulin Shock Treatment for Schizophrenia.—The amazing results already reported in some cases in which the insulin shock treatment has been applied in schizophrenia have resulted naturally in a certain amount of premature enthusiasm in relationship to the use of the method. It has been widely exploited in the press with the statement that it constitutes a cure for what has formerly been considered an incurable disease. As a result, the Committee on Public Education of the American Psychiatric

Association has considered it worthwhile to issue a public statement on the present status of this new method. The statement says, in part: "It is hoped, and may prove to be a fact, that the so-called insulin shock treatment for dementia praecox will find a useful place among the forms of treatment for dementia præcox, but its exact value has yet to be determined and it can be definitely stated that it is not a specific, nor by any means a cure for all cases of dementia præcox. It is, however, at the present time, receiving careful study in the New York and Massachusetts State Hospital systems, Bellevue Hospital, New York, and other scientific centres, but it should not be undertaken except by those adequately trained to meet the dangers connected with the treatment." (*J.A.M.A.*, Feb. 13, 1937, p. 560.)—*Minnesota Medicine.*

Salphanilamide in Urinary Infections.—The possible usefulness of sulphanilamide in other than hæmolytic streptococcal infections is being investigated in two ways, by laboratory experiment and by clinical trial. Experiment has shown that other species of bacteria are susceptible to its action, and these include *Bact typhosum*; it is therefore in accordance with expectation that at least some bacteria of the intestinal group should be vulnerable in clinical practice. Doubtless because the original Prontosil was obviously excreted in the urine, attempts to treat urinary infections with it were made, especially in Germany, before anything was known of its action, under experimental conditions, on the bacteria concerned, and these attempts met with success. Now that the mode of action of prontosil is known, and studies of its active derivative, sulphanilamide, have shown that it is excreted, largely in an active and bactericidal form, in the urine, there is every reason for undertaking the serious study of this drug as a urinary antiseptic. Such a study is reported by Dr. Meave Kenny and her colleagues in onr present issue. They report uniform success in the treatment of 46 cases of *Bact coli* infection of the urinary tract, 16 of which were cases of pyelitis of pregnancy, the urine becoming free from pus and bacteria and all symptoms being entirely relieved, usually within three or four days. The only failures have been in infections by organisms other than *Bact coli*. The advantages of the treatment, apart from its rapid and uniform effect, are the relative cheapness of the drug and the absence of the nausea and digestive disturbance often caused by mandelic acid and ammonium chloride, especially in pregnant women. It is interesting that, in spite of the regularity of sterilisation of the urinary tract, in-vitro tests by no means

always gave corresponding results ; the bactericidal power of urine from patients under treatment varied, and the susceptibility to this action of different strains of *Bact coli* also varied considerably, some being entirely resistant in vitro though in vivo they succumbed to the action of the drug. A similar study has recently been mady by Helmholtz with somewhat different results; he found sulphanilamide urine fully bactericidal to each of three strains of *Bact. coli* and *Bact lactis aerogenes*, but variable in its actions on different strains of cocci and *Proteus vulgaris*. This puzzling discrepancy between in-vitro and in vivo results will fortify the suspicion that the action of sulphanilamide in the body may not after all be directly bactericidal and nothing else.

In Germany the original prontosil is still being used a good deal, and the rapid advances for which French and English workers have been responsible seem not to be generally known. Weiser reports treating a series of cases of urinary infection with prontosil with apparently uniform success, and these were mainly of quite a different nature from the cases treated by Dr. Kenny. They were chiefly chronic infections, some in elderly subjects with prostatic obstruction or a history of calculus, and most of the infections were mixed or coccal. The evidence furnished by this paper is not conclusive, but it does suggest that some urinary tract bacteria other than *Bact. coli* may be exterminable by these drugs.—*The Lancet.*

Surgery

Diagnosis and Treatment of Cerebral Injuries.—At the March 3rd meeting of the Academic de chirurgie Dr. Clovis Vincent read a paper on the diagnosis and treatment of cerebral injuries. This is summarized in "J. A. M. A.", May 15th, 1937. Dr. Vincent, up to about ten years ago, was one of the leading neurologists in Paris. Since that time he has devoted himself to neurosurgery. His idea was to study the effects of cerebral injury in noting the clinical course following operations for cerebral tumours. By observing from hour to hour the postoperative course, one learns to know when unfavourable symptoms appear. Some patients were reoperated on and thus it was possible to study in the living a number of lesions that may cause death. The most frequent of these are extradural hematoma, serous meningitis, acute ventricular effusion, and brain collapse. These conditions may occur singly or associated with predominance of

one lesion. Among the phenomena that surgeons observe as a postoperative complication, three are to be especially borne in mind; cerebral oedema, arterial hypertension with cerebral vasodilatation, and acute pulmonary oedema. Lesions of the brain stem are much more likely to end fatally than those of the cerebral hemispheres. A mechanism is present, according to Vincent, in the wall of the third ventricle the stimulation or paralysis of which is followed by cerebral oedema, especially of the frontal lobe. A clinical observation was cited to confirm this opinion.

There exists in the bulb near the nucleus of origin of the tenth pair of cranial nerves a mechanism that appears, when traumatized, to give rise to generalized hypertension, intense cerebral vasodilatation and acute pulmonary oedema. This observation was made by Vincent in operating on the posterior fossa of the skull in several cases of tumour of the cerebellum.

Vomiting, polyuria with polydipsia and often gylcosuria as well as a more or less deep sleep were observed in operating near the third ventricle. Patients do not die as the result alone of injury to the centres that govern life directly, but also from the dysfunction of various mechanisms which control the systemic as well as interstitial circulation of the brain, which in turn regulates the secretion of the cerebrospinal fluid, consciousness and also the functions of the liver, pancreas, and adrenals.

Vincent does not believe that any difference exists between changes due to operative interventions and those following ordinary trauma to the skull and brain. Hence the treatment of the latter, so far as the cranial contents are concerned, can be deduced from observations made in cases in which operations have been performed for nontraumatic lesions, such as tumours, as follows: If the patient is conscious and there are no localizing symptoms, nothing should be done except to put the patient to bed and watch closely, as no one can foretell when serious symptoms may appear. If the patient is comatose when first seen, the gravity of the symptoms, the time elapsed since the accident, and the sequence of appearance of the symptoms must be the deciding factors. If the injury is a recent one, and the general condition indicates such serious damage to vital nerve centres that the patient can live but a few days, it is advisable to do nothing. If the injury is a recent one and the patient is in a serious condition but there is a history of a free interval without any symptoms, absolute or relative, operation is indicated. If the patient is comatose but the essential vital functions are normal or nearly so, there is no

immediate danger and one can wait, meanwhile watching for any symptoms that might call for operative intervention. Such surveillance includes the constant presence of a nurse at the bedside to note, from hour to hour, the pulse. respiration, and temperature. Any changes in the ability of the patient to swallow are especially to be noted, as well as loss of consciousness, convulsions, paralysis, and urinary incontinence. The attending surgeon himself ought to see the patient at least every six hours. If convulsions of the jacksonian type, followed by a rapidly progressive hemiplegia, appear, these are definite indications for operation. Such symptoms are but rarely observed, so that the more important question is the degree of involvement of the vital centres.

Following a review of the different types of consciousness, Vincent stated that it is the degree of automatic and instinctive consciousness, as well as the manner in which the patient acts during the second stage of deglutition, which enables the surgeon to judge the condition. The respiration can be changed both in quality and in rhythm. The progressive slowing of the pulse rate, as shown on a relatively long curve on the chart, is of much importance. An isolated rise of temperature is of less value than a steadily increasing rise. Unilateral dilatation of the pupil does not necessarily indicate the side on which a hematoma is located. One of the best signs of compression is papillary stasis. Much importance should be attached to the gradual appearance of mental confusion, ending in coma. Cerebral œdema, developing slowly, also gives rise to progressive inability to swallow, as well as to disturbances of respiration and pulse rate. Cerebral œdema is the most common complication of skull fractures. It can be responsible for the coma, even when there is no hæmorrhage, but it frequently accompanies these. It can appear so acutely as to cause death within the first twenty-four hours. Usually it appears slowly, preceded by a lucid interval, as in cases of subdural or extradural hematoma.

Owing to the difficulty of diagnosis in certain cases, the author endorsed the suggestion of Petit-Dutaillis, of ventricular puncture during exploration. The information yielded by lumbar puncture is far inferior to that following the use of the Petit-Dutaillis method. In conjunction with the latter, Vincent advises the use of four trephine openings (two frontal and two temporal), which permits obtaining a larger field for inspection of the brain and its coverings as to the presence of hematomas.

Treatment of Skull Injuries.—Lumbar puncture and intravenous injections of hypotonic or hypertonic solutions are too

frequently given without definite indications having been established. In head injuries, lumbar puncture may be a good method of treatment for slight extra-arachnoid meningeal hæmorrhages predominantly located at the base of the brain. It is indicated also in diffuse serous meningitis if one is sure that it exists. But lumbar puncture cannot be regarded as a treatment of hematoma, of encysted serous meningitis or of cerebral collapse. Lumbar puncture cannot be considered as adequate when employed alone in œdema of the brain. Following an operation for head injuries, Vincent frequently employs hypertonic or hypotonic solutions intravenously. The former are particularly useful after operation for traumatic œdema of the brain.

Treatment of Hematomas.—A hematoma large enough to give rise to signs of compression ought to be evacuated. Whether its location is extracerebral, subcerebral, or intracerebral, a large opening should be made in the skull under local anæsthesia. Rupture of a branch of the middle meningeal artery is less frequently the source of a hematoma than is generally taught. A fissured fracture can give rise to as much bleeding. After removal of the clot, preferably by aspiration, the dura is exposed, but a thin layer of coagulated blood is left on the brain. All visible intracranial bleeding is controlled by electrocoagulation, that from the bone edges by wax. Vincent never drains, having found that bleeding recurs as often with as without drainage. If a subdural hematoma is found, the opening should embrace a wide area of the vault of the skull; *viz.*, a part of the frontal, occipital and temporal regions and all of the parietal. To avoid extending the bone flap too far downward, an incision is made through the lowest point of the exposed dura to see whether the hematoma is continuous with one at the base. The latter constitutes a serious complication, and death may occur during the operation. If the hematoma on the exposed surface is of greater duration, from two to three months for example, only the contents of the cyst that has been formed need be evacuated. To avoid secondary hæmorrhage, the lateral ventricles, after every operation immediately following injury, should be filled with Ringer's solution. Intracerebral hematomas can be best evacuated by aspiration.

Treatment of Cerebral Oedema of Traumatic origin.—If the œdema involves the hemispheres, the best site for opening the skull is in the right frontal region, extending 4 or 5 cm. to the left beyond the median line. Subtemporal decompression alone is of no help in these cases. The oedematous brain must be allowed to expand toward the vault, so as to relieve the pressure

on the vital structures at the base of the brain. The operation is completed by a subtemporal trephine opening with incision of the dura at its lowest point if there appears much subdural tension. The pedicle for the frontal osteoplastic flap should be in the temporal region. A large opening in the skull decompresses better than one realizes, even without incision of the dura. In addition to such a wide frontal decompression procedure, Vincent advises intravenous injections of 15 per cent magnesium sulphate, 4 c.c. every three to four hours, and a minimum of 12 mg. of strychnine sulphate in twenty-four hours.

Treatment of Collapse of the Ventricles.—When recognized, Ringer's solution at a temperature of 37 C. (98.4 F.) is injected during operation directly into the lateral ventricles, through a small trocar with blunt ends. One must be sure that no cerebral œdema exists; if such is the case death may ensue immediately after injection of the ventricles.—*The General Practitioner.*

The Study of Wound Healing.—By Mont R. Reid, M.D., Cincinnati, Condensed from Annals of Surgery.

Believing that it is erroneous to give students and young doctors the idea that the problem of wound healing is essentially synonymous with the principles of asepsis and antisepsis, we have deliberately fostered the idea that modern surgery owes its very life to anaesthesia, the control of hemorrhage and to a better knowledge of wound healing. In this way the student is prepared for a consideration of all the fundamental principles involved in the problem rather than being encouraged to concentrate his whole attention on the aspect of bacterial contamination and sepsis. The development of infection in a wound is not a matter of bacterial organisms; it is intimately related to other considerations which are of basic importance, in understanding the whole problem of wound healing.

Among the first great principles of wound healing is the importance of eliminating or preventing the formation of necrosis and debris in wounds. Pare proved that healthy living tissues have a remarkable power to ignore bacterial contamination and to combat clinical infection, even though he knew nothing about germs. Since Pare's time, it has been proved that necrotic tissue and foreign bodies were a definite handicap to the healing of a fresh wound, even though it did not exhibit the generally accepted evidence of infection.

Fortunately, traumatic, ulcerated and infected wounds, extreme fluctuations of temperatures, and laboratory experiments

afford excellent opportunity for demonstrating to oneself and one's assistants the truth of the various influences upon the healing of wounds. If you make two similar so called aseptic wounds upon an animal and in one, cause a great deal of traumatism, use many ligatures and tie sutures tightly, both of the wounds may heal without apparent infection. But if those two wounds are again inspected after a week there will be a vast difference in appearance. The one with excessive traumatism and strangulating ligatures and sutures will show much white necrotic tissue while the other may show a uniform healthy granulating surface. If many such wounds are made and with equal bacterial contamination, there is no doubt about which one will show the greatest incidence of clinical infection and suppuration. Or, to use another illustration, one can repeat the classic experiments of Halstead, of producing peritonitis in dogs. The healthy peritoneum can withstand and overcome enormous charges of saline suspensions of bacteria, while if a piece of potato, devitalized muscle or strangulated omentum be added to the cavity, relatively small doses of bacteria will result in peritonitis. Examples of this nature teach that living tissues deprived of their blood supply by trauma, tight ligatures, and sutures will die even though at the completion of an operation no apparent changes can be detected in their appearance.

It is easy to observe upon human beings the value of the principle of rest in wound healing. We not only know that the immobilization lessens the reaction of wound healing, but that it also reduces materially the incidence of clinical infection. The conclusion is that wounds not subjected to the traumatization of activity are much more able to withstand the insults of bacterial contamination.

The effect of blood supply is easily demonstrated clinically. All that is required is to note the differences in the healing of wounds of the lower and upper extremities, and of wounds in the young and old people. Anyone who has tried to aid the healing of an ulcer in a case of peripheral vascular disease knows the importance of trying to secure for it the best blood supply.

Granulation tissue is an inevitable concomitant of wound healing, and as such, long excited the interest and study of surgeons before there was any knowledge of bacteria. Bacteria, and antiseptic procedures, have not eliminated from the process of wound healing the role of granulation tissue. Its part in the process remains just as important as it did centuries ago.

In the absence of the normal coverings and linings of the

body, granulation tissue is the body's best defence against the invasion of bacteria or toxic substances. To drive home this point let the student repeat Billroth's clinical experiment which was reported as follows: "If you inject a drachm of putrid fluid into the subcutaneous cellular tissue of a dog the result will be inflammation, fever and septicemia. If you make a large granulating surface on a dog and dress it daily with charpin soaked in putrid fluid it will have no decided effect. On the border of the inflammatory new formation the lymphatic vessels are closed; on the granulating surface there are no open lymphatic vessels, hence no reabsorption takes place." He can make a fresh wound by the side of a granulating wound and then dress the two with identical putrid substances and note the differences in the inflamed reaction.

The principle of hemostasis in wound healing may really be considered as a subdivision of Pare's teaching concerning necrosis and debris. Blood, or blood clot, in a wound is in effect a foreign body, in addition to being doubly attractive food for bacteria. Unfortunately strict adherence to the principle of hemostasis, by means of ligatures and cauterization, also involves a sacrifice of Pare's fundamental idea of the value of eliminating necrosis. The over-zealous exponent of hemostasis may do a great deal of harm to wound healing by excessive ligation and cauterization, or the enthusiastic disciple of Pare may jeopardize wound healing by allowing hemorrhage and the formation of hematomata.

There is no question about the value of the principles of asepsis and antisepsis to wound healing. They are based upon the proved harm which bacteria may be to wound healing. The problem is not the lack of appreciation of this fact but the execution of aseptic and antiseptic measures in such a way as to do more harm than good by ignoring some of the other principles of wound healing and by a failure to appreciate what living tissues themselves can do to combat the presence of bacteria. Frequently the price of aseptic and antiseptic solutions or procedures far outweighs the harm which may have resulted from the bacteria.

It is well to let every student prove for himself the harm of one or more germicidal agents which have been advocated for use in open fresh wounds. Let him make identical wounds upon a dog, wash one with salt solution and into the other pour iodine, or bichloride of mercury or alcohol or ether, and then dress them with simple Vaseline thereafter. The inflammatory reaction will be greater and there will be more sloughing in the wound treated with the anti-septics. Besides, daily bacterial counts will show

that it harbors more bacteria. With this fundamental background fewer students will go out into practice to use, unintelligently, all kinds of antiseptics in the treatment of wounds.

But it would be wrong to give you the impression that the use of every form of antiseptic therapy is harmful. It is our belief that the use of every antiseptic should be questioned and its possible harm to living cells should be weighed against its value in the control of infection. We admit the value of the use of antiseptics upon the skin: we decry their use in lieu of careful scrubbing with soap and water or their application in such strengths as to cause blistering or excoriation. Next to epithelium comes granulation tissue, upon which only when indicated, the mildest antiseptics may be used to advantage, and then only when their application is possible without traumatization or causing bleeding. Upon fresh wounds forms of antiseptic drugs or cauterizations do more harm than good. For years it has been our custom to wash them with normal salt solution both before and after debridement and to scrub them with soap and water when necessary to remove ground-in dirt or grease. There is no question that the wounds so treated have healed more benignly and that the incidence of clinical infection has been far less frequent. Since wounds cannot be made absolutely sterile, the addition of any necrosis from the use of antiseptics is a definite hindrance to wound healing.

If we will adopt the principle that every wound is a problem of tissue growth, soon will develop among surgeons a better understanding and appreciation of the various factors concerned in wound healing. If we preached that healthy living cells have a remarkable power to kill germs, and that dead cells are helpless against their invasion, then every effort would be made to eliminate from wounds dead and devitalized tissue.

As we learn more about the needs of growing cells, this may require the addition of various salts and substances which may be lacking in the patient's blood. Already we know the value of maintaining a normal fluid balance, of the addition of glucose, salt solution and blood to the patient's blood stream.

Bear in mind that cells have an optimum temperature for their growth So far as we know, this is the normal body temperature. Consideration of this influence is of particular concern in the case of healing of a wound in cold weather unless efforts are made to provide a relatively normal body temperature over the surface of the wound.—*Digest of Treatment.*

The Tinnevelly District Medical Association, Palamcottah.

(Affiliated to the Indian Medical Association)

Monthly Meeting

The Tinnevelly District Medical Association held its monthly meeting on Saturday the 25th of September 1937, at Sankarankoil, a holy place of the District. Members numbering 45 were present from all parts of the District.

After Tea-Party and music, the meeting began 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 monthly meetings held at Courtallam and Head-quarters in July and August respectively, which were passed.

1. After detailed and full discussion, the following resolution was passed unanimously:—

> "The object of the Indian Medical Association started on the model of the British Medical Association, being to develop medical and allied sciences, to improve the public health, to maintain the honour and dignity as well as the interests of the Medical Profession, to bring about the unification of all ranks of the Medical Profession in India and to improve esprit de corps among them,
>
> the object of the Tinnevelly District Medical Association being the same as above,
>
> and the Indian Medical Association being the only Association in India which provides a common platform for all classes and strata of allopathic medical practitioners practising in India,
>
> the monthly meeting of the Tinnevelly District Medical Association, assembled at Sankarankoil, on the 25th of September 1937, hereby unanimously resolves, after full discussion, that the Tinnevelly District Medical Association should be converted into a proper Branch of the Indian Medical Association with effect from the 1st of October next."

2. The following resolutions were also passed unanimously:—

(*a*) An extra subscription of one rupee per head be levied in consideration of the conversion of our Association into a Branch of the Indian Medical Association to meet the Association expenses.

(*b*) The Tinnevelly District Medical Association strongly supports the Bill to amend the Madras Medical Registration Act of 1914 proposed to be moved by Dr. P. S. Srinivasan, M.L.A., in the current session of the Madras Legislative Assembly, and urges on the Minister for Public Health and the Legislative Members to help in passing the same at an early date.

(c) In view of the fact that there has been a persistent demand for the last 25 years from the different Medical Associations and the Medical School students in this country, and in view of the fact that such a change is imperatively necessary to set up a recognised and efficient standard of Medical education, this meeting urges on the Minister for Public Health to make the I. Sc., the minimum educational qualification for eligibility for admission into the Medical Schools under the control of the Government of Madras."

Dr. P. S. Srinivasan, Sub Assistant Surgeon of the Government Head-quarters Hospital, Palamcottah, read out clinical notes on the following interesting cases which were treated at the Government Head-quarters Hospital, Palamcottah :—

(1) Two cases of severe burns.

(2) A case of Empyema of Maxillary Antrum.

(3) A case of Carcinoma of Thyroid.

Dr. P. Janardhana Rao, L.M. & S. read out interesting notes of a case of " Serum Sickness ".

A case of Empyema of the Maxillary Antrum succesfully operated by Lt. Col., T. S. Shastry, I.M.S., was exhibited to the members. The specimens of Necrosed Duodenum and Antemortem clots in the Heart derived from two fatal cases of Burns were also shown to the members.

Thereafter, Colonel Shastry, summed up the salient and important features of all the cases and offered his thanks to Dr. T. R. Srinivasa Iyengar, Selection Grade Sub-Assistant Surgeon, Local Fund Hospital, Sankarankoil, for the splendid arrangements.

An excellent dinner brought the happy gathering to a close late at night.

Special Meeting

A special Meeting of the Tinnevelly District Medical Association was held on Saturday the 16th of October 1937, at 6 P.M. in the premises of the Government Women and Children Hospital,

Vannarpet, to meet Dr. M. Subramania Iyer, M.B. & C.M., President of the South Indian Medical Union, Madras, and Vice-Chairman of the Reception Committee of the XIV All-India Medical Conference.

Lieut. Col., T. S. Shastry, I.M.S, who presided over the meeting welcomed Dr. M. Subramania Iyer, and made an appreciative reference about him and his career.

There was a free discussion in which most of the members took part, about the present position of the Medical Profession in our Province, Medical Education, and Medical Associations. Dr. Subramania Iyer, advised the formation of a Medical Association in Madras, which could have its branches in all the Districts and which should have autonomy for itself while it may work in co-operation with any All-India Medical Association and exhorted that as many members as could afford it, should join the Reception Committee and attend the forthcoming All-India Medical Conference in Madras, and press their views on the rest of the Profession assembled there.

Dr. N. Isaac, opposed the abolition of the L.M.P. course.

There was general agreement among the members on the following points:—

(1) Every member of the Profession in our Province must support the Reception Committee of the Indian Medical Conference, and make the Conference a great success; (2) every member of the Profession should join the Indian Medical Association and make it the one spokesman of the Profession whether for the Province or for the whole of India; (3) all the practitioners of Madras City should join the Madras Branch of the Indian Medical Association, (4) all the other sectional medical associations like the South Indian Medical Union, and the Licentiates' Association working in Madras should be *forthwith* amalgamated with the Madras Branch of the Indian Medical Association, as the Indian Medical Association, could serve every legitimate interest of the Profession much more effectively than any of them, and (5) the L.M.P., course should be abolished.

Colonel Shastry made a resume of the discussion and clarified it into the above conclusions.

Health Exhibition

Under the auspices of the Tinnevelly District Medical Association, in connection with its monthly meeting at Sankarankoil, a Health Exhibition was arranged at the Board High School, Sankarankoil, on Saturday the 25th of September 1937, at 10 A.M. under the auspices of V. Ramakrishnan Esq., I.C.S., Collector of Tinnevelly.

Lieut. Col., T. S. Shastry, I.M.S., the President of the Association, welcomed the guests, explained the great need for sustained propaganda to instil, into our people habits of personal domestic and rural sanitation and on behalf of Nutrition campaign to improve the resisting power of the people, and requsted Mr. V. Ramakrishna, to open the exhibition.

Mr. V. Ramakrishna, in declaring the Exhibition open, commended the efforts of the Tinnevelly District Medical Association to promote the health of our people and said that such exhibitions are very useful, instructive, and beneficial to the public and school children and promised to devote his best attention to encourage Health Propaganda.

Mr. Mathuranayagam, the Local Health Inspector explained the posters on prevention and causation of Tuberculosis, Flies, and Cholera for the benefit of about 200 school children and the public.

This was very much appreciated by the gathering.

BOOK REVIEWS

Final Report of the League of Nations' Mixed Committee on the Relation of Nutrition to Health, Agriculture and Economic Policy—Ser. L. O. N. P., 1937. II. A. 10, 327 pages. Price: 7 *s.* 6 *d.* $ 2.00.

This book of more than 300 pages, just published by the League of Nations, is the most authoritative and comprehensive study of the broader aspects of the problem of nutrition—a problem of world-wide importance—which has yet appeared. It is likely to form for years to come the basis of efforts by governments and by private initiative to improve the nutrition of a very large part of the world's population. Since everyone is interested in food, and vast numbers in the production of food, the book is eminently one for the general public as well as for the experts in the various fields covered by the study: its simple style and comprehensive treatment of the subject make it easy to read.

The Report is the result of two years' work by an international committee of agricultural, economic and health experts under the auspices of the League. It is concerned for the main part with the economic aspects of nutrition policy and with its relations to agriculture. To complete the picture, a chapter on the physiological side of the problem from the Interim Report of the Committee (The Problem of Nutrition, 4 Vols. 1936) has been included, modified in the light of recent nutrition research.

The Report is divided into three parts. The first part, which has three chapters, gives a general survey of the problem and of the work already carried out. The Introductory chapter traces the activities of the Mixed Committee since its inception and of

other international bodies working on the problem of nutrition. The second chapter outlines the development of science of nutrition and indicates the role played by nutrition in the striking improvement in public health and in the increase in population which occurred in the course of the past century. The third chapter summarises the contents and conclusions of the Report and reproduces the recommendations published by the Committee in its Interim Report.

The second part of Report is devoted exclusively to the health aspect of nutrition. It contains a clear account of the main principles of the "new knowledge of nutrition" as they have been developed by recent research; a description of the nature and functions of the most important vitamins and minerals and of the diseases resulting from their deficiency; an analysis of the nutritive qualities of various foods, and their classification as "energy-bearing" or "protective": the dietary requirements of particular classes of persons, expectant and nursing mothers, infants, children of pre-school and school age, adolescents, recruits and adults; and a summary of the dietary standards adopted by the Technical Commission of the Health Organisation of the League of Nations and of the valuation placed by this Commission on various important foodstuffs.

The third part of the Report contains a more detailed examination of the economic and agricultural considerations connected with nutrition policy. It begins by tracing the main changes which have occurred in food consumption habits during the last few decades and reaches the conclusion that average consumption in most countries of Western civilisation has on the whole been tending in the direction of improved nutrition. The second chapter discusses the problem of the adaptation of agriculture to the desired changes in consumption. It is demonstrated that agriculture has shown considerable powers of adaptation in the past, in particular where no obstacles have prevented changes in demand from expressing themselves through changes in price. It is argued that an extension of the movement towards better nutrition should prove of benefit to national agricultural systems, calling both for an increased production of protective foods—fruit, vegetables and dairy products—and for an increased output of various cereals for fodder.

Denmark in changing over from the production of cereals for export into animal husbandry as the basis of her export trade did not for this reason cease to produce cereals. Instead, she actually doubled the national production of cereals—mostly in the form of feeding stuffs for farm animals.

Chapter III is concerned with the relation of food prices to consumption and shows that the demand for most foodstuffs particularly for the protective foods—is considerably sensitive to price changes. The effects of price movements on the mutual

substitution of various foodstuffs, the significance of seasonal price movements, and the differences in elasticity of demand in various income groups are also discussed.

The following chapter considers the main determinants of food prices on the supply side—technique and costs of production, commercial policy, marketing organisation and distribution costs. Particular reference is also made to the contribution of the co-operative movement in reducing retail food prices.

The fifth and sixth chapters of Part III are devoted to the roles of income and of nutritional education influencing consumption habits. The improvements in diet which accompany increased income are demonstrated from the results of family budget studies in various countries. A comparison between the existing distribution of incomes and the costs of minimum nutritionally adequate diets shows that malnutrition of important sections of the population, and particularly of families with many young children, even in such relatively prosperous countries as the United States and the United Kingdom, can be directly traced to the effects of poverty.

The Committee realises that the raising of the income level in the different countries is essentially a national problem of a long-range character. But it draws attention to the possibility of improvements in social services, which may in part remedy malnutrition due to poverty, such as family allowances, the provision of school meals, of milk for expectant and nursing mothers, etc. Much can also be done on the side of education to improve nutrition, and in this connection attention is drawn to the considerable variations in the quality of diet obtained by families spending at the same levels (relative to the size of the family). A summary is given of the various techniques of nutritional education which have been applied in different countries, and in some cases an indication of the effects achieved.

The Report concludes with a collection of evidence relating to the present state of nutrition in various parts of the world, demonstrating that in spite of the considerable progress that has taken place in recent decades, the problem is still an urgent one. "The malnutrition which exists in all countries is at once a challenge and an opportunity: a challenge to men's consciences and an opportunity to eradicate a social evil by methods which will increase economic prosperity".

The Medical Annual (1937)—A Year Book of Treatment and Practitioner's Index.—*Edited By H. Letheby Tidy*, M.A., M D., F.R.C.P., and *A. Rendle Short*, M.D., B Sc., F.R.C.S. Fifty-fifth year. [John Wright & Sons Ltd., Bristol—20 *sh.*]

The Fifty-fifth Medical Annual maintains the high standard

of its predecessors. It portrays vividly and clearly the progress in Medical Science of 1936. In its pages are to be found the ever increasing subject of preventive medicine treated exhaustively. The distinguished array of contributors among whom may be mentioned Hamilton Bailey (Genito-Urinary Surgery), Burrel (Respiratory Diseases), Stanford Cade (Cancer) Macdonald Critchby, (Nervous System) Sir Stuart Duke Elder (Eye Diseases) Sampson Handley (Diseases of Breast) Sir John Fraser, Reginald Miller (Diseases of Children), Philip Manson Bahr, J. D. Rolleston, Sir Walter Langdon Brown, Lockhart Mummery (Rectal Surgery), Henry Devine (Psychological Medicine), must be a sufficient guarantee to the excellence of the articles. It is difficult to pick out chapters in such a book but the following subjects may be specially mentioned—Alcohol and Drug Addiction, Diseases of the Breast, Gastric and Duodenal Ulcer, Legal Decisions, Syphilis, X-ray Diagnosis, Tuberculosis, Undescended Testis, Mental Diseases, and Fractures. There is also a practitioner's index giving a short description of new pharmaceutical and dietetic preparations, Medical and Surgical appliances ; a list of the books of the year and periodicals ; a list of the Medical Institutions, homes and spas. The index is very exhaustive and is placed at the end of the book. The book is profusely illustrated and is very well got up. It is an excellent summary of all the new developments in Medicine—internal, surgical or specialised. It ought to be present in the hands of every medical man.

A Hand Book of Laboratory Medicine—Blood—*By D. Govinda Reddy*, M.D., Assistant to Prof. of Medicine, Clinical Pathological, General Hospital, Madras. With a Foreword by Lt. Col. G. R McRobert, M.D, F.R.C.P., (Lond). D.T.M. & H. (Eng). I.M.S., Prof. of Medicine and Physician, General Hospital, 1937, 160 Pages. Illustrated.—Rs. 2–4/-

This little brochure is a compilation meant as a ready reference for students and medical practitioners. It is a companion volume to the urine examinntion part which we had the pleasure of favourably reviewing in these pages some time ago. The various chapters deal with, the normal constituents of blood, study of the blood films, descriptions of the parasites in blood, classification of the anaemias and leukamias, biochemical examination of the blood and bacteriological and serological examination of the blood. As can be seen from the subjects dealt with, this small volume deals comprehensively with all parts of haematology essential for the student and general practitioner. The price is cheap, the get up, illustrations and printing are excellent and the subject matter is dealt with clearly and analytically.

Tuberculosis Cancer and Zinc—*By Douglas Barron Cruickshank*, L.R.C.P. & S., D.PH., etc., Medical Publications, Ltd., London, 1936, Pp. 75. Price: *sh.* 7/6. net.

This little book is in the nature of an hypothesis. The theme of the various chapters is based on one assumption as the author puts it "that in Tuberculosis there is a defence mechanism analogous to the bacteriophage defence in intestinal infections with the typhoid group of organisms, and that this particular phage is itself pathogenic to man. The pathogenic manifestation of this phage is cancer". In short, the author is of opinion that tuberculosis is common in individuals who manifest Zinc deficiency and cancer is frequent among those who show hyper-zinc states. The last chapter (iv) explains the Tuberculosis-Cancer complex. We have nothing to say by way of review but to add that the new method of approach to the Tuberculosis and Cancer Problem set by the author will encourage further works in this field, a newer outlook and wider vision on the Tuberculosis Cancer complex.

Frigidity in Women—Its Characteristics and Treatment—*By Dr. Edward Hitschmann and Dr. Edmund Bergler* of Psycho-Analytic Clinic, Vienna. (Translated by Polly Leedsweil). 1936, Pp. 76. Price.

This is one of the volumes of Nervous and Mental Monograph Series published by The Nervous and Mental Disease Publishing Company, Washington.

This is on 'Frigidity in Women' a condition that is not infrequently omitted in the diagnosis of nervous condition in women while perhaps most of the nervous conditions that we come across among our young women patients directly or indirectly border round "Frigidity". This volume has been specially written by the authors in the hope of spreading more widely their convictions regarding the Psychical nature of Frigidity.

A Guide to the Examination of Clinical Materials—*By Khagendra Nath Mehta*, M.B., *Nabakumar Bannerjee*, M.Sc., 1937 2nd edition, revised and enlarged, Pp. 153. Calcutta Salzer & Co. Price : Rs. 3-8/-

The present edition has been completely revised and enlarged The book contains details of all examinations of Clinical Material, written in a simple but yet comprehensive and practical manner. There are seven sections in the book, *viz.*, Urine, Blood, Sputum, Faeces, Stomach Contents, C. S. F. and Examination of Pus. There are good many useful illustrations to the text. The book will be found useful by the Medical Students and Practitioners as well.

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The Antiseptic

A Monthly Medical Journal

Edited by

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

CONTENTS.

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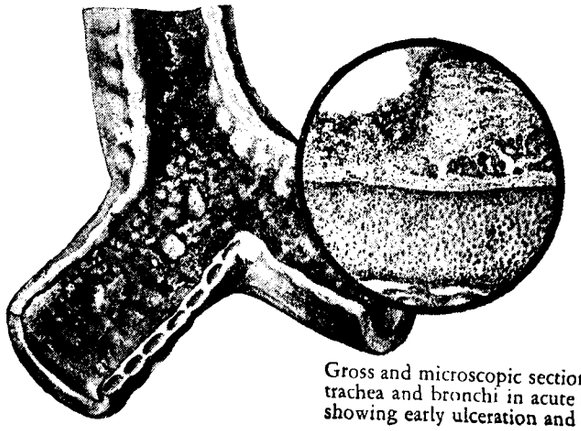

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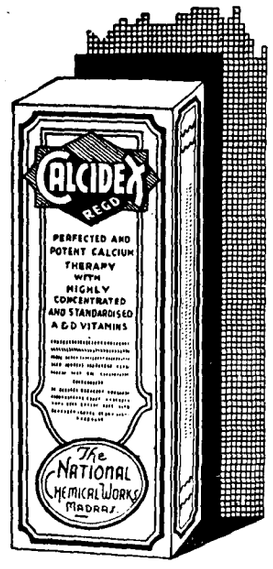

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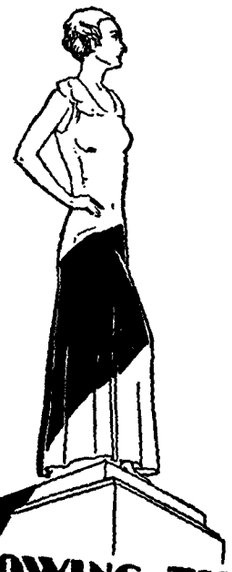

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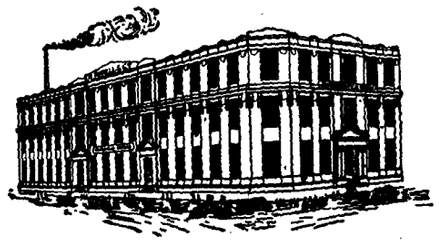

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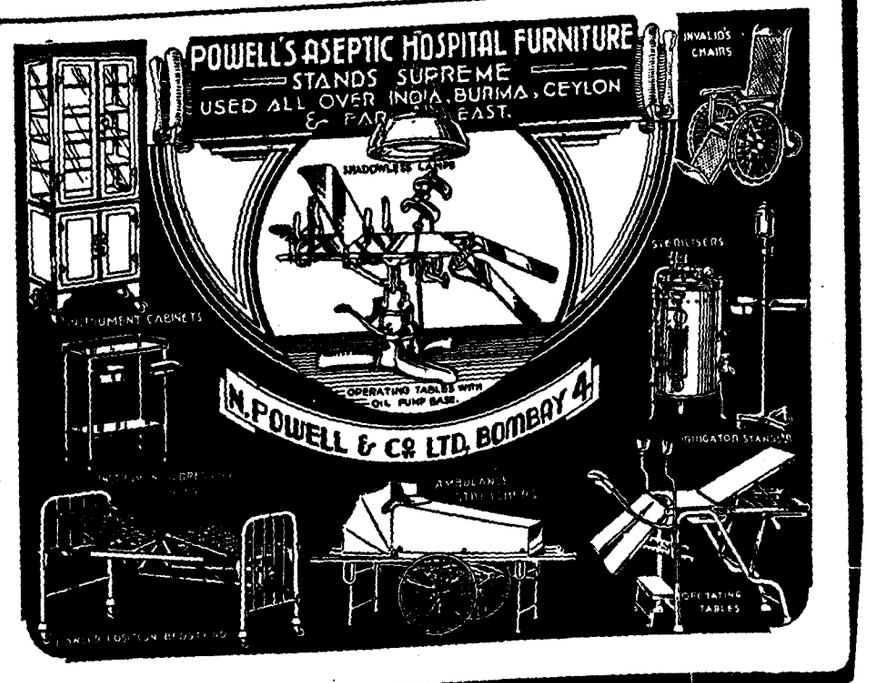

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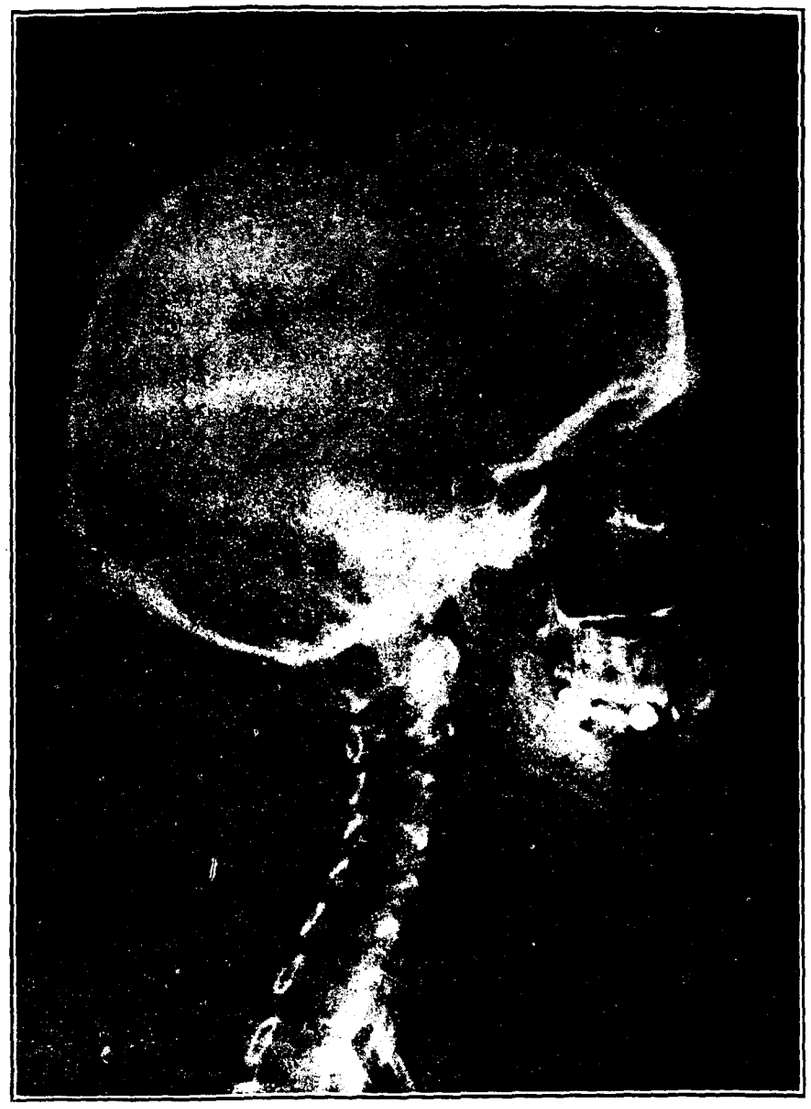

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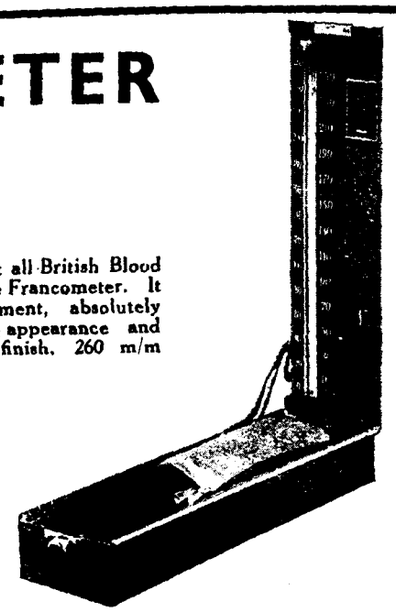

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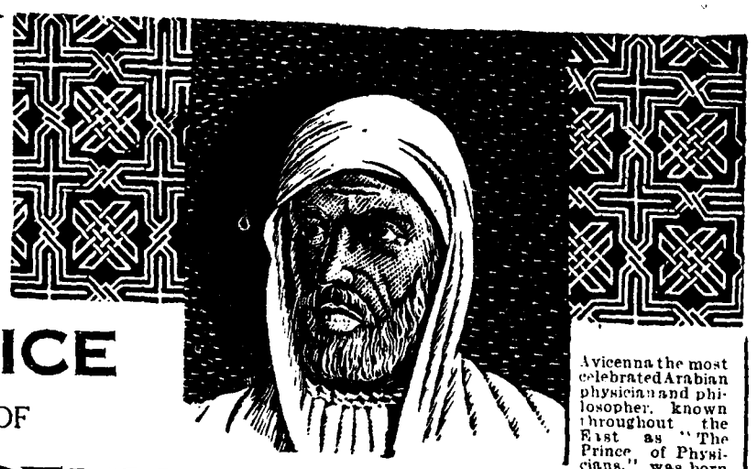

Avicenna the most celebrated Arabian physician and philosopher, known throughout the East as "The Prince of Physicians," was born at Afshena, and died at Hamadan. A. D. 980-1037.

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A. D. 980—1037.

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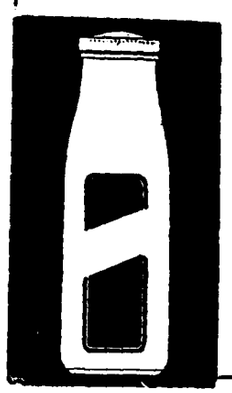

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ORIGINAL ARTICLES

Small-Pox*

With special reference to cases as seen amongst patients in the Small-pox Ward of the Campbell Hospital, Calcutta.

BY

B. C. Chatterjee, M.B., D.P.H., D.T.M.,

Hon. Physician in-charge, Small-pox, C. S. Fever, Cholera and other infectious diseases' wards, Campbell Hospital, Calcutta, and Teacher of Hygiene, Campbell Medical School, Calcutta.

(Continued from Page 927 of the Sept. '37 issue of the 'Antiseptic')

WITH the stage of desiccation, the swelling goes down, suffering is minimised and although the patient is weak and exhausted, convalescence sets in. The process of encrustation is generally completed in about 10 days from the onset of illness, when the crusts begin to fall off. With the drainage of the pustules and the gradual improvement, the temperature begins to fall and the general constitutional manifestations become less marked. The scales show a tendency to persist longest on the palms of the hands and the soles of the feet, being imbedded in the thick layers of the skin where small 'cores' may remain, which often have to be removed by a knife or scissors. The 'cores' are hard, dark-brown or black masses, buried beneath the skin.

* Specially contributed to "The Antiseptic".

During the crusting stage the most annoying symptom is manifested by intense itching of the skin and often, unless prevented, the patient will scratch so forcibly as to induce secondary infection.

Whether or not the skin-scars remain after desquamation is completed, depends upon the character of the suppurative process. If the suppurative process is superficial, the pustules dry without leaving a mark but if the papillary layer has been included in the suppurative process, a scar will surely remain at its site, due to the replacement of the epithelium by vascular granulation tissue which is transformed into connective scar-tissue, leaving the typical 'foveated' pock mark which will persist throughout life.

In some patients the hair falls out during the crusting stage and even later, but generally it grows again, except of course where the hair-follicles have been destroyed by the suppurative process. In uncomplicated cases of variola, complete recovery takes place in from 3 to 6 weeks; in the complicated cases, of course, the time limit is indefinite. Discrete lesions develop brownish scabs, granular in structure, which become dry and eventually are cast off, leaving pitted marks, particularly in the face. Secondary infection of the pocks and particularly of the lesions of the mucous membranes are common and general sepsis may develop. A generalised erythematous eruption, toxic in origin, may be present for two or three days during this period.

Clinical Varieties of Smallpox.—1. *Confluent type.*—Very severe, invariably terminates in fatality. Critical period is between tenth to fifteenth day. The manifestations of the disease from the very start are severe, the eruption is rapid in development, and it is so extensive and so numerous, that the whole skin surface looks as if it is one continuous sheet of pus. The eruptions coalesce with one another and no healthy patch of skin is left visible between the rashes. Swelling of the underlying tissue is enormous and the hands, feet and head may be mis-shapen. Swelling of the face is so marked that the patient is unable to recognise even his most intimate friend. The whole body surface is sore and very painful. There is massive involvement of the mucous membranes and the suppurative stage is accompanied by severe constitutional symptoms, *viz.*, delirium, extreme prostration and septic complications. The mortality of confluent small-pox is naturally very high. When recovery occurs it is only after a long and desperate struggle.

2. *Semi-confluent type.*—There is healthy skin visible between the individual rashes but the disease is always confluent in nature. There is the least tendency of confluence of the rashes in the face. The mortality of this type is not so high and the constitutional symptoms are not so severe.

3. *Discrete type.*—The eruptions are numerous, but they have not got the least tendency to coalesce with one another. They are always strictly distinct from each other and wide areas of healthy skin are always left visible in between the individual rashes. Swelling of the skin is not at all marked except at the sites of the lesions. The mortality in discrete type of small-pox is not high. Though the initial constitutional symptoms might be very severe yet subsequent course of the disease takes a mild run and convalescence sets in quickly.

4. *Hæmorrhagic type.*—This type is the deadliest form of small-pox. Mortality in this group is usually cent per cent. The highest mortality could be attributed to the fact that due to the massive haemolytic effect in the general circulation, the hydrogen ion concentration of the blood is greatly disturbed, life becomes incompatible and therefore death is inevitable. The initial constitutional symptoms are invariably very severe but the temperature does not run so high as in the confluent cases. The suffering of the patient is so very intense and torturing that it is beyond description. Temperature rarely goes above 102°F. as noted in a large number of cases in this hospital. The whole body becomes crimson red or shows localised subcutaneous hæmorrhages in patches. There is intense burning sensation all over the body, a sense of bursting in the præcordial region and the patient generally expires within 48 hours (4—6 days in a few cases of ours). Consciousness is retained till the last. Toxaemia is profound, respiration is hurried, dysphagia is extreme, dull aching headache is distressing and the unfortunate patient is always found to be groaning with deep boring pain, which is so torturing but strictly localised to the lumbar region. The patients describe this pain as if their back is being hammered constantly by somebody. This severe backache is the most prominent and constant symptom along with headache, vomiting, extreme restlessness, profound toxæmia and signs of collapse. Signs of meningism with prodromal rashes in the form of a few petechial eruptions here and there, sometimes simulate 'spotted fever' and instances are not rare when patients have been admitted from the out-patients' department into the Ward as cases of cerebro-spinal fever, which on further investigation have been diagnosed

as cases of haemorrhagic small-pox. Presence of sub-conjunctival haemorrhages, haematemesis, haemoptysis, melæna, menorrhagia, patches of sub-cutaneous haemorrhages, especially in the regions of the groins, axillae or upper part of the inner sides of thighs, blotchy eruptions distributed in the face, hands, legs and back which give a general feeling of shottiness on palpation and which produce a peculiarly characteristic oedematous condition of the skin with blackish discoloration, are diagnostic. Sometimes we have got to solve a very knotty problem, when cases of measles in adults are admitted in the small-pox ward as haemorrhagic small-pox during epidemic times and even people like us, who have got the humble experience of seeing many thousands of cases of small-pox, cannot always be definite about the cases unless kept on observation for a few days. I can cite a very funny case where myself and another physician concurred in our diagnosis that the case is one of measles, and advised immediate vaccination to the patient. After vaccination was performed, it was curious to find that blood was oozing from the scratches and would never stop even when pressure bandage was applied. Next day, the patient died with uterine bleeding and melæna. I shall describe the more distinguishing points later under differential diagnosis of small-pox.

Haemorrhagic small-pox may be divided into two types, according to whether the haemorrhagic manifestation appears in the invasive period or comes on during the eruptive stage. Why one case develops a haemorrhagic form of the disease and another does not, is not known. It might probably be partly due to variations in individual make-up, but an unusually toxic strain of the virus might also be responsible; because in some epidemics a higher percentage of haemorrhagic cases is found than in other epidemics.

(*a*) **Purpuric Small-pox, Black Small-pox, or Variola Purpurica.** — Most malignant form of the disease; the incubation period is usually shortened to seven or eight days. The onset is sudden and violent, the initial constitutional symptoms are very severe and prostration and collapse are profound from the start. By the second day petechiae and purpura appear, followed by haemorrhages from the mucous surfaces. Death is inevitable before the sixth day, but may occur, as noted in many of our cases, within 48—72 hours of the onset of the disease, even before the earliest manifestations of the usual eruption.

(*b*) **Variola Haemorrhagica Pustulosa.**—More common and frequent type of haemorrhagic small-pox. It is characterised by haemorrhages into the pocks in the papular, vesicular or pustular stage of development. This form of haemorrhagic small-pox is only slightly less malignant and fatal than is purpuric small-pox but is sometimes more prolonged, death usually occurring towards the end of the second week. Surface haemorrhages from the mucous membranes are usually present. This type of the disease is apparently more apt to affect those who are debilitated by previous illness, old age, or chronic alcoholism.

5. *Pseudo-haemorrhagic type of small-pox.*—On the 5th or the 6th day of the disease, purplish lines are seen in different parts of the body, but no actual haemorrhagic symptoms are ever noticed. The cases are not so malignant and the death-rate is not so high. Majority of the cases are of confluent type.

6. *Small-pox without eruptions.*—Due to direct exposure to a case and fever comes on the 12th day. Unfortunately we have not seen a single case of this type in this hospital.

7. *Abortive type of small-pox.*—The disease is ushered in by usual violent constitutional symptoms and appearance of the rash, but the case surprisingly takes a better turn within 24 hours. The rashes abort, the vesicles begin to dry up before they develop into pustules and the patient recovers within two or three weeks. We have seen a fair number of this type in our hospital during the last epidemic of 1935. Cases of this type are very curious from clinical point of view and it is certainly very difficult to say further why the disease aborts in people who were highly susceptible before.

8. *Variolloid type of small-pox.*—The disease runs a shorter and a more benign course after the eruption once appears.

9. *Inoculation type of small-pox.*—The rash comes on the 12th, or 13th, day after inoculation. We have never seen such a case here.

10. *Foetal small-pox.*—Eruptions may develop before or after birth. We have seen a number of cases of small-pox in the new born. In every instance the infection was traced to have originated from the mother. All cases proved fatal except in one case, where a female child aged 7 days only, with confluent small-pox, came round. We have never seen a single case of an infant being born with small-pox.

11. *Modified type of small-pox.*—It is a most difficult problem to diagnose a case belonging to this type. Nothing typical of the disease can frequently be seen because the course of the disease and its subsequent development are always modified in all possible ways by partial presence of previous immunity due to vaccination and re-vaccination. These cases vary in their severity according to the degree of susceptibility of the individual, but in general are characterised by an invasive stage which is quite similar to that of an usual case of small-pox, although frequently this stage is shortened to two days or even less. With the development of the eruption there is often no subsequent rise in temperature and the further course of the disease is short and comparatively mild, unless there are complications, which however are very uncommon. The usual toxicity of the disease is notably absent and even confluent eruptions may run a comparatively benign course. Most of these patients recover uneventfully and without any permanent scarring. But considerable difficulty is often encountered in distinguishing a case of modified small-pox from chicken-pox. The following points might help.

Modified small-pox is true small-pox which is modified by a partial immunity in the patient. History of vaccination and re-vaccination is important, because, the presence of a recent vaccination scar, however, is of great value in ruling out the presence of small-pox. Since attacks for the second time of the two diseases are very rare, history of a previous attack of one or the other disease, if it could be definitely elicited, is of great significance in the differential diagnosis. In subjects, who have been vaccinated long ago, the immunity may be only partial and a modified type of small-pox may occur in which the initial symptoms are very mild and the rashes are scantier, early to come out and finish its course rather quickly.

As modified small-pox is true small-pox, no matter how extremely modified the case might be, the patient must be suffering from prodromal constitutional symptoms either mild or severe. The patient suffers from fever, headache, vomiting, and backache. The rash is always preceded by these initial symptoms, however mild the case might be; in chicken-pox, the rash is noticed at first, followed by fever and malaise. Following a sharp lessening of the constitutional symptoms, the eruption in small-pox begins to appear on the third or fourth day, the rashes have been found even on the second day in a fair number of cases of modified small-pox.

However extremely modified the case might be, the character of the rash in the early stage is that of true small-pox and no matter how sparse the rash might be, the rash never spares the face, hands, wrists, palms, legs and soles. We have not seen a single case of modified small-pox where the face has been found to be free from the rash, just as I have already described that cerebro-spinal fever is impossible without headache. The rashes of modified small-pox are rarely seen to be numerous, distribution of the rashes are always on the exposed parts of the body and more on the extensor surfaces. The rash comes out in one crop, all the rashes are of the same age and variety. The rashes are never pleomorphic *i.e.*, vesicles and pustules are never seen simultaneously in the same patient. There is more or less a definite shotty feeling, rashes are round, tense, umbilicated in the vesicular stage. During the pustular stage every lesion is surrounded by a red ring, the rash is usually multi-locular. When a vesicle is pricked by a needle and pressure is applied, the rash does not collapse completely due to its multi-loculation. In spite of all these distinguishing points enumerated here, no definite opinion on the spot can be given in a few cases unless the patients are kept under observation for a few days more for further developments. In such cases where definite diagnosis cannot be given at first, we never hesitate to vaccinate immediately in spite of the fact that the case might turn into a modified one; because the patient has been directly exposed to the contagium.

12. *Alastrim* (*Amass*).—This is a mild form of small-pox occurring in un-vaccinated people. This curious form of small-pox is described in text books. We have never been able to classify a single case in this group. As described, the disease is characterised by a variable period of onset, in some cases approximating the severity of the average case of small-pox, in others, hardly sufficient to cause the patient to stay in bed. In either case, the ensuing eruption is comparatively sparse and mild and the lesions do not ordinarily go on to the frank pustular stage. This form of small-pox is due to a mild strain of virus which breeds true and apparently never reverts to the old virulent strain of small-pox. Immunologically, the alastrim virus is indistinguishable from the virus of small-pox, vaccination protecting against alastrim as well as variola and alastrim like small-pox giving an immunity to vaccination, which ordinarily lasts many years; but whereas the virus in small-pox produces a toxin which seems to further the growth and activity of such pyogenic organisms as streptococci, in alastrim these powers

appear to be essentially absent. Thus alastrim is small-pox without the greater part of its toxicity and usually without streptococcus complications. The mortality in alastrim is in some epidemics less than 1 per cent. In the last forty years, this disease has become increasingly common both in the United States and England. The incubation period is usually somewhat prolonged and may last even twenty or twenty one days.

With due deference to all the authorities, we fail to understand how an attack of small-pox in its mildest form would be possible in people who have never been vaccinated or, in other words, it can be safely assumed that the susceptibility of such people must be greatest because of the fact that there is no such thing possible which can be termed 'natural immunity' against small-pox, either complete or even partial.

Common Complications of the Skin.—*1. Secondary infections of the skin* :

(*a*) **Impetigo.**—It is so frequently present, that one is justified to consider this as part of the symptomatology of the disease..

(*b*) **Furunculosis or Boils.**—Very common and most dangerous complication, noticed in about 40% of our cases and mostly seen in the confluent cases, particularly in the stage when the crusts are being shed, that is, in the fourth week of the disease. The patient becomes riddled with multiple boils and abscesses. Pyoemic abscesses are not uncommon and many deaths have occurred in our hospital due to this trouble. Development of this serious complication is mainly due to the fault of the patients who could not be resisted against promiscuous scratching by their own fingers.

(*c*) **Subcutaneous abscesses.**—Frequently met with in a fair number of our cases.

(*d*) **Bed-sores**, localised areas of *gangrene* and *cellulitis*.

(*e*) **Erysipelas.**—Especially of the face, though very uncommon, may develop during the second or third week.

(*f*) **Keloid** conditions.

2. *Ear complications* : (*a*) the lesions may appear in the air canal and may produce distressing inflammation with even temporary loss of hearing through obstruction of the canal,

(*b*) during the suppurative stage of the disease. Otitis media is sometimes noticed especially in children.

3. *Eye complications*: (*a*) Diffuse conjunctivitis with œdema, the conjunctiva of the eyelids is the favourite site for the pocks, which do not usually appear on the eye-ball itself. (*b*) Ulcerations of the cornea. (*c*) Exposure keratitis with sloughing. (*d*) Prolapse of the iris. (*e*) Panophthalmitis.

4. *Mucous membrane complication* : (*a*) The pocks may occur in the larynx, which might lead to œdema of the glottis with even dangerous obstruction to breathing. (*b*) Ulceration of the larynx. (*c*) Extensive ulcerations of the fauces, throat and soft palate. (*d*) Oedema and ulceration of the tongue. (*e*) Nasal obstruction. (*f*) Gangrene of the vulva and penis have been rarely seen here.

5. *Lung complications* : (*a*) Bronchitis, Broncho-pneumonia—commonly seen. (*b*) Aspiration pneumonias. and (*c*) Fibrinous pleurisy—very uncommon.

6. *Heart complications* : (*a*) Pericarditis. (*b*) Myocarditis. (*c*) Endocarditis.

7. *Septicaemia* due to secondary invasion of the blood-stream by pathogenic streptococci, always ends in fatality. In a very few of our cases *streptococcus hæmolyticus* has been isolated by blood-cultures.

8. *Albuminuria* is present in almost all cases during the first week or ten days of the disease. Manifestations of an actual nephritis have never been seen in a single case in this hospital.

9. *Complications due to involvement of the Central Nervous System* : (*a*) Paralytic conditions *e.g.*, hemiplegia, paraplegia, monoplegia, disseminated sclerosis and peripheral neuritis. (*b*) Temporary loss of the powers of speech and hearing. (*c*) Mental derangements and loss of memory. (*d*) Psychoses as also cases of encephalitis, though extremely uncommon, have been seen in this hospital.

10. *Other complications* : (*a*) Tetanus, believed to be a common complication, has never been noticed here. (*b*) Adenitis, septic parotitis. (*c*) Infection of the wounds by maggots, is a very dangerous secondary complication. (*d*) Abortions, miscarriages, premature and normal deliveries, Still-births. (*e*) Arthritis, sinovitis, osteomyelitis. (*f*) Progressive wasting, profound asthenia. (*g*) Intercurrent complications ; hyperpyrexia, hypostatic pneumonia, terminal diarrhoea.

Combination of other diseases along with small-pox in the same patient, as noted in our hospital:

(1) Small-pox and cerebro-spinal fever.
(2) Small-pox and Cholera.
(3) Small-pox and Chicken-pox.
(4) Convalescent Small-pox, subsequent development of Chicken-pox as a fresh disease.
(5) Small-pox and Pulmonary Phthisis.
(6) Small-pox and Measles.
(7) Small-pox and Malaria (B. T., and M. T.)
(8) Small-pox and Mumps.
(9) Small-pox and Leprosy.
(10) Small-pox and Venereal Disease *e.g.*, hard and soft chancres, Urethritis.
(11) Small-pox and fracture-dislocations of bones.
(12) Small-pox and Blindness.
(13) Small-pox and pregnancy.

The Sciatic Pain and its Treatment*

BY

C. N. Parvani, M.B.B.S.,

Gambat, Sindh

THE treatment of Sciatic is often a baffling question as very often when the suffering is great, the consulting doctor who has almost exhausted the fund of his drugs, aided as he often is, with only limited arrangements for diagnosis and treatment, heaves a sigh of relief, when the patient leaves him in despair. Yet, sometimes, one comes across with cases where there was remarkable cure after a few days' medication of a trivial drug which, when tried in other cases, failed completely. The writer has seen some patients who, inspite of modern treatment at provincial centre after thorough examination, are still passing a life of misery.

Anatomy.—The sciatic nerve is the largest nerve in the body and is the continuation of the flattened band of sacral plexus. It passes out of pelvis through the greater sciatic foramen, descends between the greater trochanter of femur and tuberosity of ischium and along the back of thigh to about its lower third

* Specially contributed to "The Antiseptic"

where it divides into two branches tibial and common peroneal nerves. The pain is felt along sciatic and its tibial branch.

Aetiology.—It is said to be rare under middle age, although 70 % of writer's cases were under middle age. 90% of cases were males.

History.—The patient walks in the clinic on toes with knee bent. On questioning, he often gives a history of sudden paroxysms of pain, generally unilateral, following a trivial fall or an injury. Sometimes pain starts gradually in the upper thigh which after some remissions has remained his constant and dreaded companion. His suffering is greater in cold and wintry nights. Rheumatic or gouty symptoms may often be associated with him.

Investigation of Cause—On examination tender points on sciatic notch, popliteal space and outside the fibula are elicited. The Laceques sign of pain on stretching the nerve by flexing the leg on hip joint when the patient lies on his back is always present. The knee jerks are increased. *In the diseases of hip-joints*, when the leg is rotated, the pain increases in severity and also the tender points are absent. If pain is bilateral, a specific cause is to be suspected. In one instance, a young man who had been long incaptivated by sciatic pain and would not confess of any specific disease, had an immediate relief at the hand of a consultant who had him treated appropriately for syphilis. A full rectum often causes sciatic like pains.

SCIARD classifies primary sciatica as :—

(1) Radiculitis when posterior nerve root within the theca is involved.

(2) Funiculitis when the part of the root involved lies between the ganglion and the plexus.

(3) Plexitis when the nerve trunk itself is the seat of morbid process.

(4) Neuritis or peripheral neuritis when part affected is beyond the trunk.

Sciard further divides it into high sciatica when radiculitis and Funiculitis types exist. Middle sciatica when there is neuritis of plexus, nerve trunk and peripheral fossa ; and low sciatica when inflammation of nerve occurs in the popleteal fossa or beyond it.

TREATMENT can be divided under three main heads :— (1) Treatment with drugs ; (2) Injection into nerve; (3) By physical therapy.

1. *Drugs are often failures.*—A well known *vaid* at Karachi treats his patients with a daily dose of castor oil with a pill and his patients do well. Aspirin, veramon, soda salicylas are fairly known drugs for treatment. Application of constant heat gives some relief. Acupuncture is useful. A Japanese friend once showed the writer a method of acupuncture with a long slight and not pointed needle for pain in any part of the body. Especial knowledge of nerves and deft hands are required to learn that technique which our Japanese brethren seem to posses in abundance. In one case, the writer with an ordinary long injection needle made an acupuncture at the sciatic notch which gave immediate relief but the case was lost sight of. Six needles are to be inserted along the course of nerve and left for about fifteen minutes. Subcutaneous injection of small doses of soda salicylas and common salt along the course of nerve often gives good relief. Reipar A. F. D. preparation could be tried often with satisfactory results. *Cauterizing* along the course of nerve in many obstinate cases has yielded good results. But our indigenous method of cauterization is disgusting as the wound is allowed to remain septic for 3 weeks and not allowed to heal. It requires to be thoroughly investigated as the illiterate stores much faith in it.

2. *Injection into nerve.*—This is resorted to in sub-acute and chronic cases. In high sciatica epidural injections are employed and in the middle and low sciatica, injection is to be made in the nerve trunk. The quotations from M. L. Gujral's book on Injection Treatment is given in full.

(*a*) **Epidural injection.**—" The patient is placed either in the knee chest position or on the affected side with the thigh flexed. A lumbar puncture needle with small bore or an ordinary stout needle about $2\frac{1}{2}$ inches long,is inserted between the two lateral tubercles of the sacrum in line with superior median protuberance. These prominences can be made out by palpation. The needle is inserted perpendicularly until sacro-coccygeal ligament is pierced when it is pointed upwards at an acute angle, so as to enter the sacral canal without penetrating the dura. The depth of insertion is from $1\frac{3}{4}$ to 2 inches. A twenty c.c. syringe is attached,

10 to 20 c.c. of 40 % solution of antipyrin is injected. The needle is withdrawn and the puncture is sealed with collodian. The patient lies in bed for 24 hours following the injection".

(*b*) **Injection in the nerve trunk.**—Let the patient lie on the abdomen with the thighs and the knees extended. Then draw a line from the middle of sacro-coccygeal joint to the upper end of the trochanter. A point on this line lying one inch external to the junction of the inner and middle third is selected. After the selected point is well sterilized and anaesthetized with novocaine solution, a strong needle 4 inches long is slowly inserted perpendicularly to the surface. A characteristic shooting pain in the heel or along the course of the nerve is felt as soon as the nerve is reached. Solution of normal saline 60 c.cs. with or without $1\frac{1}{2}$ gr. novocaine is slowly introduced. The needle is then withdrawn and puncture sealed. In a considerable proportion of cases, immediate relief of pain is obtained. Rest is enjoined. In one of the writer's cases, the patient, being so elated after relief, walked a considerable distance after a few hours and had recurrence which was more severe than the original. A dose of aspirin and local heat were necessary. In resistant cases 2—5 injections are necessary.

3. *Physical therapy.*—Diathermy gives a constant heat and is very useful when available. Ionization with Salicylic acid with negative pole on the painful area is sometimes useful. The writer had treated one case with ionization in 1933 with success who reported recurrence only very recently after four years. When the pain subsides, a gradual exercise should be taken.

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Abscess of the Liver*

BY

Dr. Dalip Chand Bahl,

Ambala Cantonment.

ABSCESS of the liver arises under a variety of conditions but what is common to nearly all of them, except injury, is the introduction of some septic agent *via* any of the four channels: *i. e.*; (1) Portal Vein; (2) Hepatic Artery; (3) Bile Ducts; (4) Lymphatics (*e. g.*, diffuse peritonitis).

I. **Frequent Causes:**—1. Ulcerations in any portion of the bowels. Suppurative Pylephlebitis develops followed by multiple abscesses in the liver.

2. Dysentery causes the so-called tropical or solitary abscess.

3. Suppurative cholangitis due to gall stone.

II. **Rare Causes:**—1. Extension from the neighbouring tissues. (*a*) Subphrenic abscess, Empyema of lungs, Empyema of gall bladder, Pulmonary Tuberculosis.

2. Trauma.—Specially to the head. (*a*) Contusion or rupture of liver. (*b*) Foreign bodies. In rare instances, foreign bodies such as needles may pass from the stomach or gullet, lodge in the liver and excite an abscess or as in several cases, a foreign body such as a needle or a fish bone has perforated a branch of the portal vein itself and induced pylephlebitis. (*c*) Penetrating wounds.

3. Parasites: (*a*) Ascaris (Round worms). The penetration of round worms into the liver is less common and very rare of all liver flukes. (*b*) Echinococcus cyst frequently causes suppuration. (*c*) Dystoma in tropics. (*d*) Cocidia.

4. Infectious diseases. (*a*) Typhoid, Septic fever, etc.

5. Embolism through hepatic artery.

Symptoms and Signs:—1. *When abscess follows suppurative pylephlebitis* (Suppuration along the course of *Portal Vein.*) (*a*) Septic features: Chill, Fever, Sweat, Leucocytosis. Leucocytosis more apt to be present in pyæmic than in solitary abscess (*b*) Enlarged, smooth liver and slight degree of jaundice. (*c*) There being numerous foci of infection (multiple abscesses), these cases

* Specially contributed to "The Antiseptic".

run a more acute course than solitary abscesses. Pain is not a marked feature.

2. *Solitary or Tropical Abscess* (due to Amœbic Dysentery). This is latent and runs a more chronic and protracted course. This form commonly follows amœbic dysentery. It frequently occurs among Europeans in India particularly the adult males, who drink alcohol freely and are exposed to great heat. The native Indian suffers more from amœbic dysentery and less from abscess of the liver.

The following symptoms are suggestive of tropical abscess:—

(1) **Fever.**—Intermittent (but irregular) septic fever. Bears some resemblance to malarial fevers, sweating most often nocturnal. Fever is the most constant sign of hepatic abscess but in chronic cases there may be little or no fever.

(2) **Pain and tenderness.**—Right shoulder pain. Pain may be referred to the region of the right kidney resembling an attack of renal colic. Only three months back, I examined a female patient who developed a big liver abscess, but at the start she had all the symptoms of Renal colic. She had no fever but had great tenderness and pain in the region of the liver for four days. On the fifth day, she got fever and the pain lessened in the region of the kidney and became localised in the liver when diagnosis of liver abscess was confirmed, otherwise she would have been treated for renal colic for four days. About three years back, I came across a patient who developed abscess as a complication of typhoid fever. He had enlargement of the liver, but there was no actual pain. He had only a dull aching sensation. 3½ lb of pus was evacuated when operated. When peritoneum becomes involved, pain becomes sharp. Pain and tenderness are felt on pressure over liver region but tenderness is often localized over the side of abscess. Pain in the right shoulder occurs in 17 per cent. To minimise pain, the patient prefers to lie down on the right side.

(3) **Friction.**—Rub over hepatic area. May be heard and felt when peritoneum becomes implicated. Implication of lower lobe or right lung may yield signs of compression *viz.*, dulness and compression.

(4) Enlargement of Liver.—Dulness is usually increased upward but often also downward at the same time. Usually the right lobe is alone affected in 75 % of cases. The surface is smooth when the liver is greatly enlarged; there may be a spasmodic hacking cough and dyspnœa even in the absence of pleurisy.

(5) Vomiting.—Most common with abscess of left lobe.

(6) Slight Jaundice.—Causing a muddy complexion.

(7) Purulent Pleurisy.—Right side empyema is common due to perforation of abscess through diaphragm 29 %. Rupture into the lungs is more common.

(8) Oedema of the Feet.—A late but inconstant feature, a fluctuating swelling or œdema of the abdomen over liver when present is suggestive.

(9) Negative sign.—No ascites and no splenomegaly. In Malaria the spleen is enlarged.

(10) Rigidity of the right rectus in a minority.

(11) Joints.—Toxic arthritis, rarely of pyæmic origin. The joints manifestation disappears when abscess opens or discharges.

(12) Aspiration.—Entamoeba Histolytica in a reddish brown fluid. No pus in aspirated matter unless secondary infection. First locate abscess by X-ray prior to puncture.

(13) Blood.—Leucocytosis not constant. But when present will rule out malaria and typhoid in which there is leucopaenia; when leucocytosis prevails, it will be constant and not intermittent as in hepatic intermittent fever. Hepatic intermittent fever occurs with ball-valve stone in diverticulum of vater. Repeated paroxysms of chill, fever and sweat with jaundice. Jaundice deepens with each subsequent attack. Esinophilia and Iodophilia. If the abscess is well walled off, the polynuclear cells will not exhibit the iodine reaction.

(14) Urine.—High specific gravity—Loaded with urates; urea decreases while ammonia is increased. Indicanuria and albuminuria at times.

(15) Radiography.—High vault of diaphragm characteristic. Right dome immobifed during fluoroscopy. 75 % show abscess in right lobe.

3. *When due to Embolism.* By way of hepatic artery, signs of ulcerative (septic) Endocarditis.

4. *When due to suppurative cholangitis*, a direct extension of infection from bile ducts or the gall-bladder.

5. *Pyæmic Abscesses.*—These are multiple. Hepatic symptoms are marked by symptoms of pyæmia, in which condition metastasis may occur anywhere.

DIAGNOSIS.—Liver abscess can definitely be diagnosed by the typical symptoms and signs as detailed above, but in every case the diagnosis can be confirmed by exploration of the liver. This should always be done under anaesthesia with a wide long needle attached to the aspirating syringe. The commonest error in diagnosis in a case of liver abscess is to attribute the symptoms to malaria or pneumonia. The former can be properly diagnosed, while signs suggestive of basal pneumonia or pleurisy in a tropical country should be regarded as possibly due to liver abscess especially if their onset has been insidious. Leucocyte count will aid in the diagnosis from malaria as will, an examination with X-ray. The most important affection from which suppuration within the liver is to be separated is the intermittent hepatic fever associated with gall stone. The distinctive features of this condition are paroxysms of fever with rigor and sweat which may occur with great regularity, but too often are separated by long intervals, the deepening of the jaundice after the paroxysm, the entire apyrexia in the interval and maintenance of the general nutrition. The disease has lasted for years without suppuration. Finally, it is to be remembered that abscess of the liver in temperate climate at least is invariably secondary and primary source must be carefully sought for, either in dysentery, slight ulceration in the rectum, suppurating piles, ulcer of the stomach, in suppurative diseases of other parts of the body, particularly within the skull or in the bones. A history of dysentery or the presence of E. H. cysts in the stools is suggestive. Dulness or pain or an upward enlargement of the liver and any steady decline in health should at once direct suspicion to liver abscess.

TREATMENT.—The most important treatment is a prophylatic one. It consists of vigorous treatment for Amœbic dysentery or Amœbic Colitis. Liver abscess occurs in about 1/5th of all cases of dysentery of amœbic origin. In the market, at present, there are several preparations for the treatment of amœbiasis, *i.e.* Emetin, Carbarson Lilly, Yatren, Vioforom, Treparsol, Kurchi,

Stovarsal and Amibiarson. Emetin is an alkaloid of Ipecacuanha and is undoubtedly a very effective drug in the treatment of acute Amœbic dysentery, but when the disease passes into chronic stage it is less effective. As it is a cardiac depressant. it cannot be used for a long time without any risk. In acute stage, Emetin hydrochloride gr. 1 in distilled water can be used hypodermically, daily for ten or twenty days. In some cases it has failed to eliminate Amœba from the stools. But recently, I have given a trial to Amibiarson, an arsenical preparation, placed in the market by the Bengal Chemical Works, Calcutta, in capsule forms on 12 cases with most wonderful results. It is sold in a bottle of twenty capsules. It is administered twice daily for 10 days. The patient is kept on ordinary diet and the bowels are kept open with the administration of saline. Where Emetin and Carbarson have failed, Amibiarson has given wonderful results. Only a few months back, I treated a very chronic case of Amœbiasis. The patient was a doctor's wife. She had eight injections of Emetin Hydrochloride and a full course of Carbarson Lilly but the stools were not cleared of cysts of Entamœba Histolytica. I prescribed Amibiarson which she took for ten days. After ten days, stools were examined repeatedly for four days and found negative for amœbic cysts. Besides its wonderful effect on Amœbic cyst, I have found it equally effective in Flegellate Diarrhoea. A patient came to me for the treatment of chronic Diarrhoea (duration 12 years) with flatulence. Stools were examined, a few amœbic cysts, lot of Trichomonas hominis and Chilomastix mesnili were found. He was put on Amibiarson orally and emetin hypodermically. All his symptoms disappeared and stool, on repeated examination, showed negative results. Similarly, I have tried on several other cases with very good results. Carbarson Lilly is a similar preparation as Amibiarson. It has also been found very effective in some cases. Stovarsal combined with emetin injection is also worth trying.

TREATMENT OF MULTIPLE AND PYÆMIC ABSCESSES.—Prophylaxis is of greatest importance since the disease is almost invariably fatal. Purulent collection, particularly when under tension, constitutes the most etiological factor. Prompt surgical drainage of all cases of appendical and perirectal abscesses, Pyosalpinx and suppurating cholecystis and of suppurative inflammation of any abdominal viscera would prevent the occurrence of many cases of Pylephlebitis. After development of abscesses, the treatment is obviously palliative. Large, hot compressess may be applied to the abdomen. The fluid intake should be at least 2000 c.c. by hypodermoclysis, if necessary. Repeated glucose intravenously may prolong life and increase resistance.

Techniques in the Treatment of Tuberculosis of Larynx*

BY

Dr. D. N. Basak.,

Research Scholar & Post Graduate (London, Vienna) Dacca.

LARYNGEAL Tuberculosis is secondary to pulmonary disease, so, the treatment is mainly directed to the general infection. Treatment should be (1) Constitutional ; (2) Local.

1. *Constitutional.*—(1) **Rest** in the open air or Sanatorium. Voice should not be used.

(2) **Dietetic.**—(Modified Gerson's diet by Boumer.) Meat is mostly restricted. Fruit should be rich in fat but deficient in carbohydrates. Daily ration contains Protein 90 gr., Fat 162 gr., Carbohydrates 222 gr., and vitamins B, D, with fresh fruits, and vegetables, preferably salt-free, as the tubercular lesions become dry and covered with scabs by salt-free diet.

(3) **Drugs.**—The chief of them are iodine, calcium, cod liver oil, parathyroid, gold, (sanocrysin), vaccine and Tuberculin etc. But I am in favour of " Immuno-Biological defence mechanism".

Technique.—Inject Iodaseptine (Iodine preparation).

Dose.—For adult beginning with one c.c. and increasing by half c.c. till $2\frac{1}{2}$ c.c. intravenously every 4th day. By this injection, two favourable results are obtained, namely:—(*a*) Fixation of the bacilli in the place of implantation. (*b*) Diminution of the toxin-producing foci, in other words, the spread and toxin are both arrested, so, the resisting power of the body is supported.

(4) **Light Therapy.**—Local and General Irradiation.

Technique.

LOCAL IRRADIATION.—By direct method. Simply by allowing a few pencil of rays through a tube to the larynx or take a straight rod $\frac{1}{4}$" in diameter and 6" long and attach a plano-convex lens, 2" in diameter and 18" focus. Fix this tube in front of the rays which is to be focussed with normal dose.

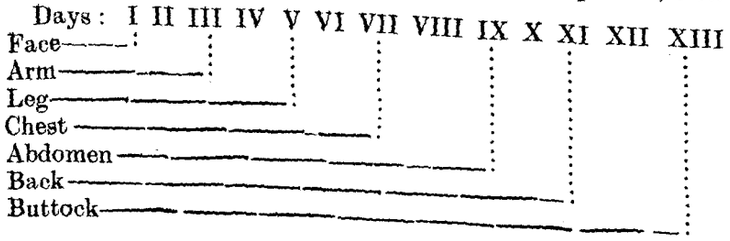
It is better to anaesthetize the part with 10% cocaine solution before using the applicator, if the patient is very sensitive.

* Specially contributed to " The Antiseptic ".

GENERAL IRRADIATION :—

Chart

Normal. Distance between the lamp and the patient, 3 ft.



Dose : Beginning with 1 min. and ending in 5 min. to each part gradually increasing the time of exposure and exposing on alternate days to a *new* organ in addition to the previous one as shown in the chart.

14th to 21st day.—Anterior aspect 5 minutes.

21st to 28th.—Posterior.

28th 35th.—Anterior again.

After 35—50 light baths, interval 1—2 months. After that, treatment may be again repeated with the idea that ; (1) it induces repair of Tubercular lesions by destroying the germs directly ; (2) improves circulation, thus stimulating cellular defence ; (3) increases general metabolism (calcium, iron, phosphorus). Vitamin "D" is formed at the surface and carried to the internal organs by the blood stream and this increases body resistance.

Contra-indications are.—(1) Patients with Glycosuria ; (2) Gout ; (3) Pyrexia ; (4) Intense Toxaemia ; (5) Acute conditions. (6) Advanced Circulatory and Renal diseases ; (7) Pulmonary T. B. with Pyrexia ; (8) Acute Inflammation of the skin.

N.B.—Antimony and Arsenic act as sensitizers; so, these should be avoided. During the treatment, note ; (1) Effects on other organs ; (2) Weight of the patient ; (3) Vigour ; (4) Appetite ; (5) Temperature etc.

2. *Local treatment*.—For any concomitant catarrh or irritable cough, inhalation through glaseptic Nebuliser with :—

Menthol	...	gr. 7
Chloretone	...	gr. 7
Liq. Paraffin	...	ʒ 1

Or

Spray inside the larynx by a laryngeal throat Antomiser :—

Pinol	...	3	½
Acid carbolic	...	♏	10
Eucalyptus	...	♏	12
Menthol	...	3	½
Hazeline	...	3	1
Parolin	...	ʒ	1

Or to suck Eucalyptus menthol pestilles. If severe, Heroine Hydrochlor gr. $\frac{1}{12}$ may be given.

For Pain.—Insufflation of a powder of Iodoform with morphia after clearing the ulcer with spray or simply blowing into the larynx, morphia gr. ¼, starch gr. ½. Dr. Koerth et al used to inject alcohol into the internal Laryngeal nerve. There may be some difficulty in swallowing for the first few days due to motor disturbance but it subsides after 5 days.

For Dysphagia.—Painting and spraying with cocaine. Orthoform (3—5 gr). insufflation through glass tube.

If swollen.—relieve with cocaine and special punch forcep.

For Ulcer.—(1) Paint with cocaine and curette, then apply 10–20 % Lactic acid solution or (2) caustics. Lakes' mixture : Lactic acid 50%, Formalin 7%, Phenol 10%.

Dr. Kellam asserts that Electric cauterization is of much benefit in these cases. It stimulates sluggish tuberculous lesions, hastens healing and aids in the relief of pain.

Dr. B. Katz (American Review) used to touch Trichlor acetic acid by a special shallow spoon-shaped container with a sliding cover (after having cocainised)

Advantages are :—(1) Easy application ; (2) Checking of pain and œdema in a few applications ; (3) Absence of inflammatory reaction ; (4) Universally good result.

Dr. Van Poole used preparation of chaulmoogra oil described by Dean and Wrenshall in 1922 and applied locally a few drops on the ulcer, 3 times a week. It relieves pain and dysphagia.

Conclusions.—A good number of injections and other preparations both foreign and Indian are available in the market as specific for this disease, but in the hands of the quacks they have certainly proved dangerous weapons, the persistence of injections even after the reaction resulting in death in most cases.

As regards my personal view, I always treat with Light Therapy and Immuno-Biological Mechanism with success.

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CASES AND COMMENTS

A Case of Postpartum Eclampsia

BY

Dr. R. Gopalan,

Physician & Surgeon (Regd.), Oomerabad, N. A.

I WAS called to a Muslim house to attend to a case of convulsion soon after delivery. When I went and saw the patient she was having violent fits with the mouth frothing and the midwife who was attending on the case had had a mouth gag, made of a wooden stick, wrapped over with a handkerchief, introduced into her mouth. The fits were so violent that I thought it expedient to stop the fits before doing anything else. So, I gave the patient a few whiffs of Chloroform and the patient was a little relieved of the fits and after a few more whiffs, the fits completely stopped.

On examination, I found that the patient had general anasarca, the œdema particularly well marked on the feet and eye lids. The pulse was rapid and full. Auscultation revealed murmur over the Praecardial area, the murmur being well marked on the Mitral region. Bubbling rales were heard all over the chest.

The relatives of the patient gave a history that she was having œdema of the legs from the 5th month of her pregnancy

and even a slight exertion made her breathless. The patient was a primipara and the delivery, a normal one.

On finding that the patient showed signs of returning fits, I gave her an injection of Morphia and instructed the relatives to send word to me if the fits returned.

On the next morning, I was called again to see the case. This time the patient was free from fits and was conscious, even though she was restless. On examination, I found the patient running a temperature of 103°. The pulse was full and rapid. Percussion of the back revealed dulness over the base of both the lungs and on auscultation, I found rales over those areas. The breathing was tubular in character. The discharge of lochia had completely stopped and the urine was scanty and highly coloured.

This examination prompted me to diagnose the case to be one of Pneumonia superimposed upon the puerperal complications and to adopt the following line of treatment:

The midwife in attendance was asked to give the patient a vaginal douche; an injection of Septicæmine (Cortial) 4 c.c. was given intravenously and a drachm of Pulvis Jalap Co. was given by mouth. The head side of the bed was raised to promote vaginal discharge. Antiphlogistine was applied to the chest and back. I asked the relatives of the patient to give her plenty of barley water and to put her on Horlick's Malted Milk with a little Glucose D powder added to it.

When I went on the evening of the same day, I found the patient having incessant cough with the expectoration of a rusty sputum. The temperature was 104°, breathing was rapid and the pulse full and bounding. The skin was hot and dry. The patient was very restless. She had eight watery motions and the urine which was a little increased in quantity was loaded with Albumin. There was a small reduction in the anasarca. I gave her another injection of Septicæmine 4 c.c. and the following mixture to be taken every 4 hours:—

℞	Pot. Citras	...	grs. xv
	Pot. Acetas	...	grs. xv
	Spt. Aeth. Nit.	...	♏ x
	Liq. Ammon. Acet.	...	ʒ i
	Vin. Ipecac.	...	♏ x
	Tinct. Scilla	...	♏ xv
	Tinct. Digit.	...	♏ x
	Aq. Chloroform add.	...	℥ i

A dose of Pul. Ipecac. Co of 7 grs. was given to be taken at 10. P. M.

The next morning I found the patient a little better. She had a good sleep the previous night and the cough was not at all troublesome. The temperature was 100.6° and the œdema was reduced to some extent. Examination of the lungs showed persistence of dulness at the bases and rales. I gave her another injection of Septicæmine and the same mixture was continued. To promote uterine discharge Pul. Ergot. grs. 7 was given three times a day to be taken alternately with the mixture. The diet continued to be the same as on the previous day. Panopepton in whey was given as a tonic and restorative.

In the evening, there was a little increase in temperature to 101.2° and also a slight cough with the expectoration of a blood tinged sputum. The signs in the lungs were the same. There was a marked improvement in the general condition of the patient. The same treatment and diet were continued.

In the course of six days, the lung complications had subsided, the temperature came down to normal and there was marked reduction in the œdema. I increased the dose of Tinct. Digitalis to 20m. in the mixture. This change had brought a marked reduction in the anasarca. After three days, the dose of Digitalis was reduced to 5m. and was given mixed with expectorants.

In about 15 days' time the patient was able to move about with the help of relatives. Since the patient was very anæmic, she was given Syr. Hæmoglobin and the patient made an uneventful recovery afterwards.

Discussion.—The point of interest in this case is, though the disease started as Postpartum Eclampsia, it soon subsided and gave rise to other puerperal complications. The bubbling rales which were heard over the lung areas on the first examination were most probably due to the accumulation of froth caused by the fits. The injection of Septicæmine (Cortial) helped very much to relieve the patient of the temperature, to effect diuresis and to rid the patient of the toxæmic condition. Since Cardio vascular disorder in the patient contributed much to the state of general anasarca, the addition of Tinct. Digitalis in the mixture helped very much to bring down the œdema.

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A Case of Malaria Resembling Diphtheria

BY

Dr. A. K. Choudhury

Late Resident Medical Officer, European Estates and Hospitals, Naogaon, P. O. Rajshahi Dt.

On the 16th June '37 at about 5 p.m., I visited the daughter of Mr. K. G. Lahiry, Pleader, Naogaon, aged 5 years, who was suffering since a few days back, from simple cough only and found the following :

16-6-'37. At 5 p.m.—Temp. 102.8 ; could not swallow anything ; Tonsils—both enlarged very much, very red ; a small white membrane on the right lateral side. Suspecting it for Diphtheria at the start, I injected one 3000 units of Diphtheria Antitoxin Serum ; and prescribed Prontosil Tab. (Bayer) ½ tablet 4 times daily. Gave Hydrogen Peroxide to gargle frequently and freely. At about 11 p.m. found no change.

17-6-'37. At 8 a. m., found the same signs and symptoms without any change whatever. I then treated for Follicular Tonsillitis and injected ½ c.c. of Van CoH (combined Bacterial Vaccine) of Parke Davis & Co. Proseptasine Tablet (May & Baker, Ltd.) ½ tablet 4 times daily. Gargle : the same. Paint : the same.

18-6-'37. At about 8 a. m. I found everything the same as in the previous morning without any change at all. The motions being liquid and very offensive, I gave :

℞	Acid citric crystal	...	gr. x
	Tinct. ferri perchlor	...	♏. x
	Pot. chloras	...	gr. x
	Syr.	...	ʒ ss
	Aqua ad.	...	℥ i

Mft. mist. put 4 marks. 1 mark for every 3 hours.

All other treatments of the previous days such as paint, gargling etc., were repeated.

19-6-37. 8 a. m.—everything the same as was in the previous morning. Only the motions changed in colour, odour, quantity and number. I gave :

℞	Quinine Hydrochlor	...	gr. iv
	Acid citric	...	gr. x
	Spt. chloroform	...	♏ v
	Syr. Rose	...	ʒ x
	Aqua ad.	...	℥ i

Mft. mist. send 2 such. 1 to be taken in every 3 hours.

At about 11 a. m., temperature came down to 97.4°. Swelling and pain diminished to nearly half. She felt comparatively greater comfort, could speak, swallow easily etc. A 2nd dose of quinine was advised. At about 3 p. m. temperature—96.4°. Swelling and pain—subsided totally. Tonsils—went down to normal. That membrane fell down while gargling with Hydrogen Peroxide, which could not be removed even with so many swabbings. Otherwise alright. No complaint at all.

20-6-'37. 9 a.m.—No complaint. She began her normal habits such as play etc. Gave 2 doses of Quinine mixture and 2 doses of Alkaline mixture alternately. Semi liquid diet was given.

21-6'37. Treatment, same as in the previous day *i.e.* Quinine and Alkali alternately. Rice was permitted, being unavoidable; since 3 p.m. on 19-6-37 she was alright and with no complaint even uptil now.

Being in a far off place without any facilities for microscopical examinations, I couldn't but diagnose the case as diphtheria in the first instance. My object in publishing this article is that this is my first case where I found Malaria simulating Diphtheria in every way, clinically, and that a single dose of Quinine Hydrochlor was able to bring down the malady and the membrane (such as we notice in severe tonsillitis) like a magic.

I shall be glad to hear from my brothers and seniors, if any one has met with a case like this, and the line of treatment he has adopted.

Dyspnœa and Heart Failure—A Clinical Consideration

BY

J. Mukerjee, M.B.,

Circular Road, Ranchi.

In our every day practice we come across quite a number of cases of difficulty of breathing. Some are easily diagnosed; others present considerable difficulties. As a matter of fact, a speedy arrival at a conclusive opinion is absolutely necessary with regard to the true nature of suffering patients, some of whom may lose their lives for delay in coming to an accurate understanding on the part of the Physician. For instance, Hysteria, Acute Dilatation of the Heart, Asthma or Uræmia may present the same symptom complex, yet the treatment in each case would be perfectly different. Here, delay may be dangerous.

With such a view, let us undertake a study of Dyspnoea. We may begin with the varieties or a sort of classification. The basis of the automatic regulation of respiratory function stands on a chemical and a nervous process—Co_2 and pneumogastric nerve. Therefore our classification falls under three categories—(1) Physiological, (2) Mechanical and (3) Pathological.

1. *Physiological* :—Exertion or exercise is normally accompanied by increased heart-rate, rise in blood pressure and polypnœa, which subside rapidly after cessation of exercise. But only in defective reserve of cardio-pulmonary force, there will be real prolonged dyspnœa.

2. *Mechanical* :—Foreign-bodies in air passages. Restriction of the movement of diaphragm as in obesity or flatulence.

3. *Pathological* :—Dyspnœa at rest is generally pathological. Here we have some sub-groups :

(*a*) Neurosis.—Some neurotics may simulate the symptoms of Dyspnœa and cause unnecessary alarm. Fortunately the paroxysms of acute fits in these cases are associated with contradictory signs. The heart and lungs remain clear. There is a history of neurotic habits or hysteria. The trouble may be ended or completely removed by diverting the patient's mind. It is never continuous but paroxysmal, coming on in distinct attacks. There is no cyanosis, no increased heart-rate.

(*b*) Anæmia.—Dyspnœa occurs for want of proper amount of oxygen carrier in blood.

(*c*) Lesions of Respiratory System.—Pneumonia, pleurisy with effusion, emphysema, fibrosis of lungs, chronic bronchitis. Besides, one should remember Laryngitis, Diphtheria, Oedema, Glottis, Retro-pharyngeal abscess, in which difficult noisy inspiration is noticeable. In pulmonary cases, the lung lesion is manifest. Expiratory difficulties with whistling sounds are noticeable in Asthma, Emphysema, sometimes in Tuberculosis. Chronic Bronchitis causes damage of the right heart and later on, the Dyspnœa becomes one of mixed type—both the heart and the lungs being involved.

(*d*) Toxic or Infectious State.—Uræmia, Diabetic coma. History and conditions of the Kidney and urine will help to fix the diagnosis.

(*e*) Lesions of the circulatory system.

Weak myocardium, incompensated heart. Dyspnœa may be found in early or later stage in Heart Failure. Here Dyspnœa is generally accompanied by cyanosis, præcordial or epigastric pain. Anxiety and fear of death are common features. Reduced blood pressure. Even in cases of high blood pressure, the pressure reading comes to a comparatively lower level. The attack may take place several times in a night. It may recur as soon as the patient attempts to fall asleep. The picture in acute dyspnœa is very oppressive. Tossing and tumbling in the bed from end to end. Now sitting up to put up a brave fight, now sinking down in utter exhaustion, is a common feature; cyanosis and sweating are very conspicuous. All air passages are clear, still there is deadly struggle for breath. A sudden insufficiency of the left heart precipitates the attack.

Tobacco, alcohol, overwork, coronary diseases are predisposing causes. Many attacks take place in the early morning. Perhaps this is the time when the metabolism is at the lowest ebb and there is vagus preponderance. So, what happens is this. The sluggish circulation fails to bring sufficient oxygen and nutrition to the cardio-respiratory centre. Accumulated Co_2 stimulates the bulbar centre and polypnœa begins. In healthy heart-condition, a few gaspings may activate the left ventricle and thus avoid dyspnœa and establish balance. But a weak myocardium fails to respond to such mechanism and the dyspnœa begins.

TREATMENT.—To subdue the psychic factor and to maintain circulation, nutrition of the myocardium should be the sheet-anchor. Morphia does the first part. It allays anxiety and fear of death. Adrenalin with Liquor Glyceryl Tinct. will help the myocardium. These two meet the danger signal and give succour in the following way. Adrenalin dilates the coronary vessels but constricts the peripheral vessels and thus raises blood pressure. While the Liq. Glyceryl-tinct. dilates the peripheral vessels and thus overcomes the excessive load in the peripheri. So, the ideal combination would be Morphine $\frac{1}{3}$ gr. Sol. Adrenalin (1 in 1000) $\frac{1}{2}$ c.c. and 2 minims of Liq. Glyceryl-tinct. as subcutaneous injection. Besides the utility of the Liq. Glyceryl-tinct, a little dilution of Adrenalin is helpful. Because, in some patients pure Adrenalin produces a kind of set-back, though temporary, by increasing cyanosis, producing tremor and increasing perspiration. The diluent is the solution of Morphia or 8 minims of Redistilled water may be used.

The effect of the injection is marvellous. After the injection, a mixture may be prescribed.

℞	Spt. Etheris Co	...	3 p.
	Spt. Am. Aromat	...	3 p.
	Tinc. Card Co	...	3 p.
	Spt. Chloroform	...	♏ x
	Aqua ad.	...	℥ i

One to be taken every 3 hours.

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Two Interesting Cases

BY

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Case No. 1.

PATIENT, aged 22 years, washerwoman and nullipara, was getting fever for about 5 days, with rigors; it subsided without any treatment. After that, she used to pass 4 motions daily with blood and mucus, with Tenesmus for a week, for which, she had been treated in the state dispensary. Two days after this *i.e.*, on the 13th September, 1936, I was called upon to see the case.

Condition:—Patient drowsy; Temperature 101.5°; Tongue dry and coated; Bowels constipated for 2 days; Spleen enlarged and Pulse 100 p. m.

Thinking it might be Hysteria, I administered Diaphoretic mixture with a large dose of magsulph and tinct. valerian Ammoniata. That day passed without any change in her condition. Next day *i.e.*, on the 14th September, the patient was still drowsy. Bowels had not moved and temperature was 98°. I then injected Quinine Bi-hydrochlor gr. v intramuscularly and continued the same mixture.

Then, on the 15th September, she at once became delirious used to get up from bed, even against great resistance, talking at random and some nonsense, and doing some foolish gestures.

Bowels still not moved, and temperature 99°. After sometime, she began to bawl out at one time and to weep at another time, was tossing about and keeping quite restless. This terrified the attendants and the neighbours and laymen began to remark 'the ghost has entered her body and it is doing this mischief'. So they advised the husband of the lady to bring a sorcerer to get rid of the ghost. Every arrangement was made for the purpose, without my being informed of it.

At my usual time, I visited the patient and noticed these things. I then admonished the husband for all this nonsense and warned him that instead of getting rid of the ghost, he would only get rid of her life, by allowing the sorcerer to administer violent strokes by means of his big 'magic' staff. This had the desired effect and the idea was dropped. I then injected H. M. C. which induced a quiet sleep for the whole night.

Then, on the 16th evening, the same thing recurred, and the bowels had not yet moved even with large doses of magsulph. Her abdomen gave a feel of the lumps of roundworms. I then at once administered a dose of Santonin gr. iii and calomel gr. ii with Salol and Sodii Bicarb and Veramon Tablet I. Then she slept but early in the morning of the 17th, she became again violent and quite restless, so I was called again. I then gave her a pint of soap and water Enema, which retained there for a time due to the blocking of the passage by the bundles of roundworms, then, after stretching the rectum wide, bundles of worms began to pass with foul swelling fæcal matter. This time, two dozen worms were passed. She was much relieved of the distress. Much of her talking and violence lessened but still there remained picking at bedclothes, muttering and delirium. She was now semi-conscious. Then,Intestinal Antiseptics were administered by mouth and soap and water given daily. This process continued for 4 days, worms being passed, daily about a dozen. Still there was no complete consciousness. Then, on the 21st, there was complete retention of urine for 24 hours. Patient drowsy and restless. Hands and feet becoming cold, I then cauterised the patient and a pint of urine was drawn, which relieved her symptoms. Thinking all this is due to worms, Santonin was again administered, worms were still passing, in all more than 100 worms were passed by this time, still there was no complete consciousness.

On the 22nd, injected urotropine 5 c.c. intravenously and administered Intestinal Antiseptics by mouth; again on the 24th, injected urotropine and administered Santonin again. By this

time more than 150 worms were passed. Now she regained full consciousness and asked for something to eat. During these 12 days, she was kept only on water. Now she was allowed liquid diet. Patient has become very weak, not being able to sit up in bed, without assistance. Gradually, she regained her strength. After a month, she was allowed to take rice.

All these phenomena were due to the toxins caused by the Roundworms.

N. B.—Previously the patient never complained of anything, she was quite healthy and doing her daily out-door duties.

Case No. 2.

Patient aged 6 years, son of a school master, had congenital dislocation of the hip-joints. He was taken to Mission Hospital, *Miraj, for treatment.* There, he was plastered and was lying in the wards. At this time, cases of measles were admitted to the wards; so, as a precaution, he was removed here. The boy was alright for a week; after that, suddenly he got high fever shooting up to 104.5° with severe headache and backache. He was restless and sleepless for the whole day and night. The father of the boy, sat by his side patting the head. The next day, erythematous rashes appeared profusely on the body and face—the temperature remaining high. As they were measles, the parents did not think it necessary to give any medicinal treatment. So three days passed without any amelioration in his condition. Temperature remained high and pain in the head was constant.

Thereafter, the father of the boy called on me to see the boy. I accordingly went to see the case on the 31st January, 1937.

Condition:—Boy restless, temperature 101.5°: pulse 130 p. m. and volume small; marked Dyspnœa; Face, pale and anxious looking and the rashes had withered away.

On examination of the chest, I found bases of the lungs full of crepitations and rales. Palpation of the abdomen gave a soft cord-like feel. It was definitely a case of Pneumonia having all the signs and symptoms of Pneumonia, I then at once gave an injection of camphor-in-oil 3 grains and a stimulant mixture T. D. S. and a powder of Santonin with Calomel and Salol and Sodi Bicarb, to be given after two hours.

Temperature came down to 98.5° at noon; pulse, same but patient very much drowsy refusing to take anything. In the evening he passed a soft motion with three roundworms in it. Temperature 98°; pulse 120 p. m.; dyspnœa same; face very

much pale and patient still drowsy. I then gave two tablets of digitalin and strophanthin to be given every two hours and glucose water instead of simple water and asked the father of the boy to apply antiphlogistine to the chest. But as the boy was naughty, he did not allow it to be applied. So it was given up.

I was anxious about the case during the night but the night passed without any untoward happening. Next day *i.e.*, 1st February, 1937, he passed three more roundworms without any fæcal matter. Pulse, same; temperatue 100°; dyspnœa same. But the front of the chest was full of rales but the back was getting clear, patient, still drowsy. Camphor-in-oil was injected and stimulant mixture continued.

Then, on the morning of 2nd February, the father of the boy came running, saying that the condition of the boy had become worse; hands and feet had become cold and he was very much drowsy, so much so, that evening, even violent shaking of the body did not wake him up. Head was drooping when he was taken on the shoulder and the mouth distracted.

I then hurried up to see the case. I found pulse rapid with small volume. Temperature 99° (at night, it was 102°; gradually coming down). Front of the chest which was full of rales, the previous night, was now getting clear,and the patient was still drowsy. While I was examining his chest, he passed six worms without fæces and he opened his eyes and asked for water. After that, he became wide awake. I then gave him an injection of camphor-in-oil 3 gr. and continued the stimulant mixture. Condition which half an hour ago, was very critical now became hopeful and as the chest was becoming clear, there was easy breathing. With slight variations in temperature, it came to normal afterwards continued to remain so. Subsequently 3 worms were passed daily. So in 3 days, more than 36 worms were passed in all by this time. Condition began to improve and the boy became alright in a week. Interesting point:—

The condition, once seemed to be grave, became later on better to our astonishment; vitality of the boy was very poor and had Pneumonia been genuine, there would have been very little chance of his recovery from that acute condition and as Pneumonia was caused temporarily by the roundworms, as is suggested by the life cycle of the worms, all the Pneumonic signs cleared up very rapidly. During my practice, I have recorded many cases of Roundworm Infection, which give clinical manifestations of almost all diseases that are met with in the human body.

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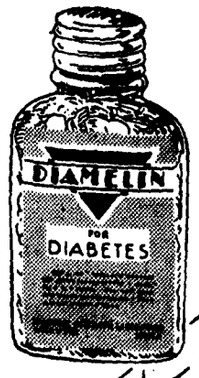

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EDITORIAL

Rural Hygiene

THE question of Rural Hygiene, is a burning one throughout the world to-day. Even in the Medical World, this subject is no longer one of mere academic interest. It has become a live issue. Time was when medical men pinned their faith in Curative Medicine alone and placed it in the forefront, thrusting Preventive Medicine to the background and relegating it to the limbo of oblivion. But the order has now been reversed. Nature cure, which includes fresh air, pure water, nutritious food, sound sleep and good exercise, has come to supplement largely, if not supplant, the drug cure. Doctors have also found that the drugs they prescribe are ineffectual if the patient's mental outlook and physical environments are much below par. The Health Organisation of the League of Nations, since its inauguration after the termination of the World War in 1918, has directed its attention mainly, if not entirely to the preventive aspect of Medicine. Rural Hygiene has not escaped its notice. There was a Conference held in 1931, under the auspices of the League, which discussed all the problems relating to Rural Hygiene in Europe. In 1933, another Conference was held in Cape Town, to discuss similar problems in Africa. *A third Conference was held at Bandoeng (Java) between 3rd and 13th

* Report of the Inter-Governmental Conference of Far-Eastern Countries on Rural Hygiene, held at Bandoeng (Java), August 3rd to 13th 1937—Published by the League of Nations, Geneva, 1937, Pp. 119.

August '37, which discussed the problems of Rural Hygiene in Far-Eastern countries, comprising India, Burma, Siam, Malaya, Indo-China, the Philippines, the Netherlands East Indies and Ceylon. The Report of this Conference is now before us. It is a very valuable and interesting document and has come at an opportune moment, when the Congress Ministries are putting forth, in the seven provinces of India, their maximum efforts 'towards the bettering of the social, economic, health and cultural conditions of the country-dwellers'. As the lot of medical men in this country will, in future, be inextricably woven with that of the peasants and artisans in rural parts, the resolutions and recommendations of this Conference will be found to be of absorbing interest to the Medical Profession. This is our apology for introducing this subject here and now.

The Report consists of five chapters. The first chapter deals with *Health and Medical Services*. At the Conference, the question arose as to whether the curative and preventive activities should be combined in one and the same authority or they should be separate and distinct. This is the crux of the problem in India to-day and no satisfactory solution has as yet been reached. In this connection, the following observations of the Preparatory Commission appointed by the Conference, are worth noting :—

(1) "Methods of reaching the people and securing their co-operation vary very much in different countries but few of them make pure hygiene attractive and this is the reason why leaders of health activities still make but slow progress".

(2) "The methods of reaching the rural population with curative and preventive activities present some of the most difficult problems brought forward at this Conference. Some of the Rapporteurs believe that curative activities should precede health activities; some, that the two should be carried out concurrently; while others believe that the siting of clinics, dispensaries and hospitals and the effective use of these institutions can best be secured by giving priority to hygiene. The people should be led, not driven and it is the task of the health workers to make hygienic as well as curative work attractive".

(3) "It is exceptional to find an individual in whom preventive and curative work can be combined. Where it is economically possible, the personnel of curative and hygienic activities should be separated particularly as regards the village workers, who should be concerned with one type of work only. A capable physician or surgeon will ordinarily be so busy with his own duties that it is unfair and unreasonable to expect him to have the time for supervising the health work in his area. This is a strong argument in favour of placing whole-time health officers in charge of preventive work in rural areas. There must, however, be the closest possible co-operation between both sides".

(4) "Many official medical and health departments seem to have difficulty in securing and keeping competent personnel, but this is largely a question of economics. Governments would be well advised to take full cognizance of the fact that cheap personnel leads to inefficiency, a lower standard of public health and costly reconstruction. Security of tenure for a health officer is an essential factor in enabling him to discharge his duties fearlessly and efficiently".

(5) "Reference was made to the fact that the establishment of a medical or hospital service without a properly organized health service does not raise the standard of general health. It seems a very important principle that wherever possible, hygienic work should precede curative work in order to obtain a more efficient use of dispensaries and hospitals and make more permanent the benefits of curative activities."

(6) "The training of midwives varies very greatly and while in some countries it has been developed to a very high level, in others midwives receive only very short and perfunctory instruction. The use of untrained village midwives has been resorted to in some places during the transitional period. By teaching these women hygiene and non-interference, they can be made to serve a useful purpose without lowering the general standard of training. It is not always possible to ignore the village midwife and it is often advisable to obtain her co-operation."

On the basis of the above findings and observations and after thorough discussion, the Conference passed as many as sixteen

resolutions on the subject of health and medical services. As space forbids us to quote them in extenso, we give below a gist of those resolutions :—

(1) Preventive medicine is the cheapest means of improving the health conditions of the population in the rural areas and efforts should therefore be principally directed along preventive lines.

(2) Preventive medicine and curative medicine may be combined in one organisation or carried out by separate organisations. Where they are combined, preventive work should not be neglected. Where carried out by separate organisations, neither organisation should develop disproportionately to the other.

(3) Accurate vital statistics should be collected.

(4) Medical and Public Health Services should be brought as near to the population as possible but the decentralisation of activities should be guided and supervised by a central body to maintain efficiency and ensure a uniform policy.

(5) No single type of organization can be recommended for general adoption, as the principle of decentralisation must vary with local conditions and resources. Permanent results can be obtained only if the size of the field of operation is determined in accordance with the capacity of the staff.

(6) With regard to the training of medical men, the western standard which has been adopted in many eastern countries, should be accelerated as much as possible.

(7) In the sphere of medical education, every country should attain the highest scientific level of theoretical and practical training, which should include facilities and opportunities for research. The spirit of preventive and social medicine should permeate more and more the whole programme of medical studies.

(8) The importance of adequately training a large body of auxiliary personnel is emphasized in order that the connecting link between the rural inhabitant and the medical men may be as efficient as possible.

(9) The auxiliary staff should receive adequate training in hygiene and preventive medicine.

(10) At present, it is not possible to allocate the per capita expenditure on medical and public health services.

(11) All Governments should consider the importance of public health and be prepared to finance it liberally.

(12) The Governments should realise that the economic loss caused throughout the Far-East by ill-health is a vital factor in determining the ultimate welfare of a country.

(13) Funds may be either central or local. The principle of local support should be inculcated whenever possible and the proportion contributed by local bodies should gradually increase.

(14) Approved voluntary agencies and associations should be encouraged to contribute to health activities.

(15) Emoluments offered should be fully adequate so that the service might be attractive.

(16) Administrations when considering budgets for health purposes should bear in mind the following points :— (*a*) The financial saving and economic advantages which result from employing the local people of the country and from using local materials, whenever practicable, in construction and maintenance of works in rural areas; (*b*) The value in times of financial prosperity of forming a reserve fund to be set aside for health and medical services in times of economic depression so that the necessary continuity of work may be safeguarded.

Chapter II relates to Rural Reconstruction and collaboration of the population. "It is recognized on all hands that the peasant's standard of living should be raised, that his life should be made fuller and brighter; in other words, he should become a more healthy and happy individual and a more useful citizen". All Governments should make this objective the very centre of their policy. In the opinion of the Conference, it is necessary that every village or group of villages as the case may be, should have an organisation of its own, namely a Committee for conducting its affairs and promoting its welfare in all directions. There should also be a Committee of Management, consisting of Government experts, representatives of villages and other non-officials to advise village Committees as to the programme to be undertaken and to see that the programme is carried out, due consideration

being given to the psychology of the peasant. The village Committees may be entrusted with duties relating to : (*a*) water supply ; (*b*) sanitation, house improvement and village planning ; (*c*) construction and maintenance of village roads and waterways ; (*d*) social and recreational activities including playgrounds and (*e*) education of adults both men and women. Every village or group of villages should have as far as possible (*a*) a health centre or unit ; (*b*) a school and a library ; (*c*) facilities for improved animal husbandry, including the provision of preventive veterinary services ; (*d*) co-operative societies ; (*e*) demonstrations of improved agricultural practices ; (*f*) home gardens and (*g*) home industries. Women should be given all opportunity to develop their activities in this important field. The Conference also emphasizes the important part to be played by the village school in the work of rural reconstruction.

Chapters III, IV, and V deal respectively with Sanitation and Sanitary Engineering, Nutrition, and Measures for combating certain diseases in rural areas. The recommendations made with regard to these matters by the Conference, are practical and economical and can profitably be adopted by governments, local bodies and private organisations.

The report abounds with useful suggestions for the betterment of the lot of the rural population and for medical men to play their part in this humanitarian task. We have drawn, in the above paragraphs, relevant portions therefrom, for the edification of our readers. The Report deserves to be in the hands of every Medical Practitioner, so that he may get himself fully posted with the rural health problems, which he will soon be asked to tackle in this country. We think no praise will be too high and no reward will be too great for the services which the Health Organisation of the League of Nations has rendered to the suffering humanity at large, during its long and useful career of nearly two decades.

GLEANINGS FROM MEDICAL PRESS

Medicine and Therapeutics

Clinical Experience in the use of Sulfanilamide at the New Haven Hospital:—P. O. Hageman, M. D., New Haven, Conn. Condensed from the Journal of Pediatrics.

During the past six months a variety of infectious conditions have been treated with sulfanilamide on the pediatric service of

the New Haven Hospital. With the exception of beta-hemolytic streptococcic infections our experience has been very limited.

Erysipelas.—Six cases responded satisfactorily within forty-eight hours. Two cases of erysipelas in newborn babies with positive blood cultures showed dramatic recoveries. One of these developed an abscess after the drug was discontinued ; after incision, and drainage was performed recovery was prompt.

Pneumonia.—Three of the five cases of pneumonia had empyema when treatment was instituted. In these instances, the severity of the disease was favourably modified, but contraction of the chest and thickening of the pleura created difficult therapeutic problems. Two of the three required thoracotomy. Two cases without empyema responded satisfactorily. All cases recovered.

Meningitis.—(1 case) The spinal fluid which was heavily infected in this case when treatment was instituted, became sterile in forty-eight hours. Internal hydrocephalus developed during convalescence even though the infection had long since subsided.

Mastoiditis.— (12 cases) Eight cases of mastoiditis subsided without surgical treatment. Only one case required operation after treatment was started. In the remaining three cases operation was performed on admission. The most dramatic recovery without operation occurred in a case with destructive mastoiditis and meningeal irritation (4, 000 cells in the spinal fluid).

Otitis Media.—(9 cases) Two cases subsided without developing discharge. Myringotomy was performed before sulfanilamide was started in three instances. No myringotomies were done after treatment was instituted. Mastoiditis did not develop in any of the nine cases. The drug appeared to shorten the course of the disease in all but one instance.

Sinusitis.—Four cases of sinusitis responded satisfactorily without surgical intervention.

Tonsillitis.—The immediate therapeutic result was excellent in seven cases, but beta-hemolytic streptococci persisted in throat cultures in some instances four and five weeks.

Cervical Adenitis.—One of the seven cases required incision and drainage. Relapse occurred in one instance, but response to a second course of sulfanilamide was satisfactory. The remaining cases subsided promptly.

Scarlet Fever.—In a group of eight cases, the toxic phase of the disease seemed unaffected by sulfanilamide therapy. No septic complications occurred.

Rheumatic Fever.—This patient had severe cardiac involvement and expired several days after sulfanilamide was started.

Miscellaneous Infections.—One case of gonococcic ophthalmia developed a negative conjunctival smear thirty-six hours after sulfanilamide was started. Of three cases of gonoccocic vaginitis the courses of two seemed unaffected and the third responded very satisfactorily. Sulfanilamide had no effect in one case of staphylococcic septicemia. Influenzal meningitis treated with sulfanilamide ran its natural course and terminated fatally in one case. Colon bacilluria cleared completely in forty-eight hours in one instance. A case of typhoid fever, which is still under tretment, has shown no beneficial effects from the drug.

Dosage.—When practicable, sulfanilamide given orally was the preferred method of administration. In general, 1 gram per day per 20 pounds of body weight (with a maximum of 4. 8 grams per day) was given in divided doses at six-hours intervals. Parenteral sulfanilamide was given subcutaneously and intraspinally in 0.8 per cent solution in physiologic saline. The dosage of sulfanilamide for subcutaneous administration was 0.8 gram per 40 pounds of body weight per day, given in divided doses at twelve-hour intervals. Prontosil has been discarded in favour of crystalline sulfanilamide because the latter seems more effective and convenient and is less expensive.

Summary.—The results presented along with impressions gained during this study indicate that sulfanilamide is a useful, though not harmless, chemotherapeutic agent in the treatment of beta-hemolytic streptococcic infections. Data on the efficacy of sulfanilamide in other types of infection are too meagre to warrant an opinion.—*Digest of Treatment.*

The Medical Uses of Radium.—The activities during 1936 in the experimental laboratories and the clinical research centres cooperating in the special investigation of the effects of radiation are summarised in a green book issued by the Medical Research Council. The subject of radio-sensitiveness is receiving much attention; this is, of course, of the utmost importance to the clinician who has to consider suitable treatments for tumours which may vary widely in their response. The work of Mr. F. G. Spear, D.Sc., and Dr. A. Glucksmann at the Strangeways Research Laboratory has shown that it is possible to discriminate between the effects of radiation, of chilling, and of fasting on mitotic division in tadpoles, and that radiation in the doses used is only

effective in producing degeneration when mitosis is either active or approaching a state of activity. The occurrence of degenerate cells has also been studied quantitatively in this laboratory and the results support the theory that the effect of gamma rays on cells about to divide makes them unfitted for the ordeal of mitosis. Mr. D. E. Lea, PH.D., in collaboration with the Low Temperature Research Station, has investigated the action of gamma rays on bacteria and concludes that large doses of radiation have in addition to their lethal action the property of inhibiting division without hindering the increase of volume of the individual organism. He has also demonstrated an interesting difference in the reaction of certain organisms to beta radiation though their reaction to gamma radiation is very similar. Dr. J. C. Mottram of the Mount Vernon Hospital and the Radium Institue has attempted to relate radio-resistance to anaerobiosis. Basing his argument on observation of the effect of radiation on the deep lying cells of tar cancers in mice, he suggests that the better the blood-supply the more sensitive the cell. He believes that periods of rapid growth, which can be found by measuring the tumour, are associated with an increased blood-supply and that radiation during these periods is more effective. Certain cases of advanced but slowly evolving cancer in the human subject have been treated by radiation given only during the times of growth, 500 r being given each time radiation is applied, and it is said that a number of tumours have been made to disappear locally. The influence of abundant mitotic division has also been studied and it seems that there must be some difficulty in distinguishing between the two effects with tumours treated in vivo. The statement that tumours composed of small cell masses should be more sensitive than those with large cell masses is open to question, since certain large encephaloid tumours of the breast, for instance, are very radiosensitive.

Further proof of the difference is sensitivity of the actively functioning and relatively quiescent tissues is given by the experiments of Dr. H. A. Colwell and Dr. G. P. Gladstone at the Barnato Joel Laboratories of the Middlesex Hospital. They irradiated pregnant rats at full term and killed the animals 24 hours later. Histological examination of the alimentary canal of mother and fœtus showed pronounced changes in the adult tissues, but practically no deviation from the normal in the section of the irradiated fœtus. Further interesting reports come from Prof. Sidney Russ and Miss G. M. Scott at the same

laboratory, from Dr. M.A.C. Cowell of the Holt Radium Institute, and from Dr. Joan Ross of the Royal Free Hospital. At the physics department of the Imperial College of Science and Technology experiments on artificial radio-activity, the biological action of neutrons, and the effects of low temperature on absorption of neutrons suggest interesting possibilities, and much careful work by Mr. W. V. Mayneord, M.Sc., at the Royal Cancer Hospital finally concludes that c.m.g.h. unit is equal to 8.3 rontgens. The section on therapy follows the usual lines and no special innovations call for comment. The number of cases of cancer of the breast treated by radium implantation shows a slight decrease, suggesting that it has not replaced surgery for the early case, while some centres now prefer X-ray therapy for the advanced case. The results in cancer of the cervix show a slight but steady improvement, and the very low mortality-rate in the year 1936 is particularly hopeful; it looks as if the immediate dangers of treatment are being overcome. Birmingham draws attention to the danger of necrosis in the treatment of cancer in the mouth, and to the difficulty of distinguishing necrosis from recurrence. For the cases quoted the dose stated is 8000 r in 164 and in 198 hours; this dose is higher than that delivered in most centres. Finally there is a short report on the one gramme teleradium units. The two-and-four-gramme units which are being installed at University College Hospital and at the Middlesex Hospital are not yet available for treatment.—*The Lancet.*

Sulphanilamide in Gonorrhœa.—The treatment of bacterial infections with sulphanilamide and related substances was discussed last week at the Royal Society of Medicine (see p. 928). when Dr. Leonard Colebrook drew attention to some of the toxic effects that may arise. Dr. G. A. Buttle in an account of experimental work said that the gonococcus was as susceptible to sulphanilamide *in vitro* as meningococcus, and for the moment interest is focussed on the possibility of treating gonorrhœa with this drug. Since the demonstration by Proom that sulphanilamide is effective against experimental infection with the meningococcus, it has been assumed for the purpose of therapeutic trial that the gonococcus is also susceptible, and the truth of this assumption is now confirmed by Levaditi and Vaisman. These authors have succeeded in producing what appears to be true infection by the gonococcus in mice by the manœuvre, suggested originally by Miller and Castles, and used by Proom in his work

with meningococcus, of adding mucin to the inoculum. On the clinical side there are now several favourable reports, to which another is added by Dr. A. J. Cokkinis at p. 905 of this issue. It appears from his study that most cases both of acute and of chronic gonorrhoea respond rapidly to the treatment, while a few seem entirely resistant to it. It is not clear that this resistance depends altogether on the anatomical location of the disease, and since the gonococcus is, serologically at least, a heterogeneous species, it may well be that resistance to sulphanilamide is a property of certain types of this organism. This is one of several matters which await investigation, not the least of which is the later results of the treatment. Dr. Cokkinis's report, like others which have already appeared, is of a preliminary nature. Meanwhile, there is news from Germany of further progress in this direction. Grutz, having experienced complete failure in the treatment of gonorrhœa with prontosil, and moderate success only with prontosil album (sulphanilamide), reports successful clinical trials of four new compounds which are said to be of similar nature; their actual composition is undisclosed and they are not yet available commercially. It cannot be emphasized too strongly that treatment with sulphanilamide requires close and expert supervision; success is evidently dependent on heavy dosage, which demands careful control if various toxic manifestations are to be avoided. These, according to numerous accounts, include besides sulphaemoglobinaemia, which is now almost familiar, a skin rash and fever about the seventh day of administration, bone marrow changes leading to anæmia or even a fatal agranulocytosis, and optic neuritis. These more serious effects are fortunately rare, but it is nevertheless necessary when this drug is given that every facility should exist for their early recognition. The possibility of self-administration envisaged by Dr. Cokkinis when the public comes to recognize that gonorrhoea can be cured by swallowing tablets is alarming, and the sooner sulphanilamide and allied compounds are scheduled as dangerous drugs the better. Another warning appears necessary at this stage. The constantly expanding sphere of useful application of this drug may easily lead to its being looked upon as a "cure-all" for infections generally. Although, as Dr. Cokkinis points out, it may have a remarkable effect in a great variety of conditions, it must not be supposed that all cases of the diseases he mentions will respond to it. Susceptibility to this treatment is not a property of certain diseases in the anatomical sense, such as otitis, arthritis,

and peritonitis ; it is dependent on the identity of the micro-organism causing them, and an exact bacteriological diagnosis is necessary to intelligent therapy. The bacteria which have so far been shown to be susceptible to sulphanilamide are *streptococcus pyogenes*, certain members of the coli-typhoid group, the meningococcus, and the gonococcus. The possibility of controlling pneumococcal and staphylococcal infections either with sulphanilamide or with other related compounds which are now being studied is still in doubt, and other bacteria, so far as is known, are insusceptible. The microbic rather than the regional diagnosis is thus the factor governing success or failure, and no observations which neglect this will add usefully to our knowledge of this remarkable remedy.—*British Medical Journal*.

Treatment of Lung abscess by Guaiacol Intravenously:—CHARLES H. NAMMACK and ARTHUR MARTIN TIBER, New York (*Journal A. M. A.* July 31, 1937), state that in about fifty cases guaiacol was used intravenously in the treatment of lung abscess. Their present article deals with the procedure and method of carrying out the treatment and presentation of twenty cases. The purpose of their study was to investigate the effects of guaiacol on the course of acute and chronic non-tuberculosis lung abscess. The patients felt considerably better in a very short time after its administration, owing to the subsidence of the fever and cough and to the decrease of the daily sputum output and the loss of its foul odour. Serial roentgenograms showed early regression of the large area of pneumonitis surrounding the abscess cavity and later its acutal disappearance. It is felt that the eradication of all foci of infection about the mouth, nose and throat and moderate restriction of all activities until the roentgenogram shows complete healing is very essential if the result of this type of treatment are to be permanent. Of the four deaths in the series, one was due to a malignant condition of the lung, one to traumatic subdural hæmorrhage and two to recurrence of the abscess. The abscess reappeared in those patients who refused to have their infected gums treated. Because many lung abscesses heal spontaneously and because of the danger of early operation, most authorities agree that acute lung abscess should be treated medically from six to twelve weeks before any surgical procedures are resorted to. Yet, after reviewing the literature, one is impressed with the lack of active medical treatment during this period. As the intravenous use of guaiacol causes early subsidence of the symptoms and a regression of the pathologic condition in the lung without producing any unfavorable reactions, it appears that this type of therapy should be used in the treatment of patients with acute and chronic lung abscess.—*Medical Times, New York*.

Surgery

The Treatment of Carbuncles:—By Gerald Ovens, M. B., F. R. C. S., London. Condensed from The Lancet.

The modern tendency towards more conservative treatment of acute infections, coinciding with the appearance of specific antisera on the market, has led me to adopt a fairly standardized procedure in treating carbuncles. The results have been good.

I inject 6.0 cc. of anti-staphylococcal serum intramuscularly as soon as a carbuncle is diagnosed. In about one-fifth of the cases this is repeated after 3 days. The most striking effect is the abolition of pain within 12-24 hours. Although this relief is not so rapid as that which follows incision, the many disadvantages of incison-especially the need for a general anaesthetic-outweigh this advantage. Aspirin and phenacetin, or a small dose of morphia, may be used during this period.

Within a few hours the indurated surroundings become soft and fluctuant, while the center becomes diffluent, and a profuse discharge occurs. Among the necrotic debris on the surface will be discovered many patches of living epithelium; the survival of these accounts for the shorter course of the disease and the better scar. Incision, and to a lesser extent antiseptics, must destory many of them.

A dressing of adhesive strapping, such as Elastoplast, is used exclusively. It is applied directly over the carbuncle and also includes a large area of surrounding skin. Thus on the trunks and limbs, the strapping extends 4-5 inches beyond the indurated area in all directions. On the face, numerous narrow strips are used and as much healthy skin included as possible. If the lesion is on the upper lip, both lips and the whole cheek of the affected side must be securely strapped. Hairy parts are shaved over a large area first.

This dressing secures local rest for the carbuncle, and is renewed only when it has become sodden with discharge. Owing to the layer of accumulated fluid which separates it from the surface of the carbuncle its removal is easy and painless. For the first few days it is changed daily; later it can stay untouched for 3 or 4 days.—*Digest of Treatment*.

The Treatment of Undescended Testes with Anterior pituitary-like substance.—By W. O. Thompson M. D.; A. D. Bevan, M. D.; N. J. Heckel, M. D.; E. R. MaCarthy, M. D.; and P. K. Thompson, M. D., Chicago. Condensed from Endocrinology.

The production of genital growth and testicular descent with gonad stimulating substance in the urine of pregnant women has been reported in a large percentage of boys and young men with hypogenitalism and eryptorchidism. To some surgeons familiar with the finding at operation of anatomical factors making descent difficult or impossible, many of these reports appeared enthusiastic. It therefore seemed desirable to make a critical study of the problem by a group of observers, one of whom should be a surgeon of wide experience in this field.

It would be highly desirable to know how many of the testes previously reported on were of the migratory type, that is, those which move back and forth from the canal to the scrotum. It has been repeatedly demonstrated that this type of testis tends to remain permanently in the scrotum after puberty and its variable position may lead to the recording of false results.

We used follutein of E. R. Squibb & Sons. This material originally contained 125 R. U. per c.c., but has recently been changed to contain 100 R. U. per cc. It is a sterile glycerine solution of the anterior pituitary-like sex factor found in pregnancy urine. Other names for this substance are antuitrin-S, urinary hebin, prolan, prolan A and B, rho 1 and 2 praehormon, APL factor, gynatrin, and antophysin. While the effect of this material on the gonads in many ways resembles that of the anterior lobe of the pituitary, there are many points of difference, notably, its apparent failure to affect the ovary in the absence of the pituitary. There is considerable discussion about the site of its action, some observers claiming that it affects only the interstitial cells of the testis and has no effect on the seminiferous tubules, while others claim it stimulates the production of spermatozoa. The dosage used varied, but commonly was about 200 R. U. 3 times a week for an average of 5 months. We have observed the effects of treatment in 21 undescended testes in 18 boys from 1½ to 17 years of age. In 8 instances the testes were intra-abdominal, and in 13 inguinal. Descent occurred in 4 patients (18%). In all 4 the testis was in the inguinal canal before treatment, and in 2 could be pushed into the upper end of the scrotum. Descent occurred within one month in all 4. In one of these 4 patients the testis returned to the inguinal canal when treatment was stopped.

Seven of the patients in whom descent failed to occur were later operated upon and in each instance anatomical factors were found at operation which prevented descent, namely, shortness of the structures to which the cord and testis were attached. These structures include the peritoneal process, the transversalis fascia, the cremasteric muscle and fascia, and the intercolumnar fascia. In addition, the peritoneal process was directed abnormally in 3 cases and there was an absent external ring in one case.

Our patients received as large doses of the APL substance as those of some authors reporting a much higher percentage of successful results. The fact that descent occurred within one month in all 4 of the successful cases, and that the external genitalia increased in size in practically all cases, together with the findings at operation, suggest that our treatment was adequate.

The ideal age for the treatment has not been determined. The material tends to induce changes which stimulate premature puberty in the younger boys and the advisability of such a procedure should be carefully considered. However, in our series we have not seen any evidence of injury and we feel that we are warranted in continuing the use of the agent as an experiment.

While the number of instances in which descent occurred in our series is small, the increase in size and vascularity of the genital organs makes subsequent operative procedures less difficult. For this reason it would appear desirable to treat all patients for from 4 to 6 months with APL substance. If descent occurs, well and good. If not, the child should be given the benefit of an operation with the purpose of bringing the testis into the scrotum before the advent of puberty.—*Digest of Treatment.*

The Modern Treatment of Fracture of the Neck of the Femur.—In "Ars Medici" No. 6, 1937, Max Jerusalem says that it is not at all to be wondered at that this injury has advanced into the focus of general interest. It was held a few decades ago to be incurable, and to-day offers excellent chances of healing. In the last four years also, the literature on the fractures of the neck of the femur has increased immeasurably. There are not only amazing cures, but also some failures recorded; the latter, as is always the case, caused partly by unfavourable circumstances, partly by lack of the correct indication or technique. It is therefore in place to offer the general practi-

tioner a short critical outline and list of important indications, naturally without attempting to mechanize everything. The stereotyped association of earlier times: fracture of the neck of the femur—incurable, and that of later times: fracture of the neck of the femur—plaster cast or supporting apparatus, and finally that of to-day: fracture of the neck of the femur—nailing, all these must be combated.

Every method, now as well as previously, has its definite indications; the incurable cases have still not been reduced to nil. It is important first of all to establish the fact that fracture of the neck of the femur is not an injury characteristic only of advanced old age, but that on the contrary it often enough affects young people as well, at sport or in a motor accident; not counting the separation of the epiphysis of adolescents, which in a sense may be included in this category. Then the difference between medial and lateral fractures is to be maintained (Bohler calls them adduction and abduction fractures after the mechanism of their production). The lateral, extra-articular fracture of the collum femoris is not more serious and is not to be treated differently than a fracture of the femur shaft, whereas the medial intra-articular fracture shows almost no tendency to heal spontaneously, but more often results in a pseudo-arthrosis. This fracture is the real crux medici or, better said, crux aegroti.

I shall only briefly describe the historical development of the methods of treatment customary to-day. Lorenz was the first to teach exact reposition. Whiteman achieved the greatest success with fixation in a plaster cast that extended from the toes to the armpits and remained on for several months. As regards ossification, Stoehr showed good results with conservative treatment. Because of the long duration of the cure, the subjective complaints and the frequent complications, the treatment in plaster casts was not completely satisfactory. It was therefore always attempted to shorten the duration of the cure by operating. Transplantation of a sliver from the tibia after boring a canal from the trochanter major, the introduction of screws, nails and pins of all kinds in the same path, all of these were tried by various authorities and mostly given up again. Understandably! For they correspond in no manner to the mechanical laws of the construction and burdening of the head and neck of the femur (Pauwels). Only when the American, Smith-Petersen, discovered the strong three-edged nail, capable of supporting a great weight and yet not hurting the bone, did we

have the technical prerequisite for the osteosynthesis of the collum femoris. The credit for introducing and propagating the Smith-Petersen nailing in Europe belongs to Bohler, to whose tireless efforts and initiative much of the further development of the method is also due. The new goal now became to reduce the dangers of the operation as much as possible. For the introduction of the large foreign body exactly centrally took place under the guidance of the eye when the hip-joint had been opened wide; and this was alone a serious and dangerous procedure which brought a definite percentage of mortality.

Efforts were therefore immediately made to bring the unsatisfactory extra-articular method of earlier times into the service of the new technique. After many vain attempts to attain the necessary carrying capacity through the introduction of several thin wires or pins, the following principle finally established itself: after exact reduction of the fracture bore through with the Kirschner wire exactly centrally from the trochanter with Rontgen control; if the operation has failed, it may be repeated several times without injury. Upon the leading wire, which is lying correctly and projecting out of the bone, the correspondingly perforated three-edged nail is threaded, so to speak, and in this manner safely hammered in in the right direction. This thought lay in the air, and it is perhaps due to an accident that of all those who had applied themselves to the problem I was the first to develop and publish it (Jerusalem, Arch. clin. Chir. 1932, report on the German Congress of Surgeons). A short time later Johanson (Goteborg) published a similar procedure of operation; and King (Melbourne) the same. Many others followed. Especially Felsenreich (clinic Denk) is to be thanked for many important technical improvements. The nailing of the neck of the femur now spread far and wide. Naturally many failures also occurred, one reason being that many cases were blindly operated, including many that were unsuitable for operation. The increasing mortality can surely not be blamed on the method, but much rather on the circumstance that the operation was frequently undertaken too early and death from apoplexy, pneumonia or some other disease followed, which would have happened anyhow. The operation of the fracture of the collum femoris demands a certain period of waiting, especially with very old people. A further cause of complications is poor technique. Perforations of the pan of the hip-joint through the leading wire, even of the osseous pelvis, the intestines, the ureter and the iliac vein have occurred and

been reported upon (Ztrlbl. f. Chir., No. 49, 1936.) The danger of the necrosis of the head of the femur is, in my opinion, usually due to the mechanism of the injury itself (rupture of important blood vessels), but can doubtless also be induced by rough handling during the preparation and the operation. The final result is then arthritis deformans with all its symptoms that are so difficult to treat. The difficulties of the operation should not be under-rated. Whoever does not possess the capacity to judge distance well with his eyes and a plastic imagination, had better stay away from this operation. Of course there have been attempts made to mechanize the direction of the boring, that is, to make it independent of estimation with the eye. In this direction Delbet and his school have constructed various complicated apparatuses. A simple scheme for the determination of the frontal axis was found by Stracker. Most recently a very serviceable apparatus discovered by Valls (Buenos Aires) has been used, which was further improved by Bohler and Jeschke. It permits an easier and surer orientation, shortens the duration of the operation and economizes on X-ray pictures. But the problem is by no means completely solved; the extremest of care and patience are necessary now, just as they were before, if we wish to avoid failure.

Summary.

Pre-treatment: As first aid immobilization of the injured leg by means of lateral supports (sand sacks, etc.). As soon as possible reduction through abduction and inward rotation. Laying upon Braun's frame, extension. Under favourable circumstances all this may be done at the home of the patient. Definitive therapy after not less than a week in a well-equipped hospital. Conservative treatment: (a) Without plaster cast with very old or very decrepid people, or with serious pathological changes in the bone (or example Kienbock, softening of the femur neck); (b) with plaster cast or continual extension in cases of extra-articular lateral fractures and fresh separation of the epiphysis. It is better to avoid plaster with very fat or diabetic people. Nailing: With fresh medial fractures and with pseudoarthroses, as long as the head of the femur is not atrophic or sclerotic. The great advantages of the operation—shortening of the stay at the hospital, avoidance of pain, quick restoration of the ability to work. at least of the normal capacity to walk—all these are attained only through correct judgment of the indications, the best of technique and careful individualization, which

should be applied to every medical treatment.—*The General Practitioner.*

Obstetrics and Gynaecology

The Chemical Diagnosis of Pregnancy by Detection of Estrin in Urine. II. A Note on the Hydrolysis of Estrin Esters.—By M. J. Schmulovitz and H. B. Wylie. Jour. Lab. & Clin. Med. 22: 1037-1039 (July) 1937.

Experimental data concerning optimum acidity for the hydrolysis of estrin esters in the chemical procedure for pregnancy diagnosis are briefly reported. The results of the experiments are: (1) an increase in the acidity of hydrolysis results in the intensification of the color of the urine and of its ether extract; (2) an increase in the acidity of hydrolysis produces a compound which is ether soluble, colorless, insoluble in Na_2CO_3 but soluble in NaOH, nonvolatile with steam and capable of coupling with the diazotized para-nitroaniline to give an intensely red azo dye. The authors conclude that in the procedure for the chemical detection of estrin the most accurate results are to be obtained when the acidity at which the urine is hydrolyzed is not below pH 4.—W. de L.—*Abstracts from Current Literature.*

Climacteric Troubles.—Treatment. Prof. F. Siegert, Freiburg i. Br. (Med. Klin., No. 17, 1937.)

Climacteric shows the aspects of a many-sided hormonal disturbance. The irregularities of the course of menstruation, caused by the gradual change in the ovarial function, are most conspicuous. The varying supply of follicular hormone into the bloodstream results in an irregular proliferation of the mucous membrane of the uterus, which governs the condition under which the menstruation takes place. As a result of the persistency of ripe follicles, there especially develops an over-production of hormone and this produces the so-called glandulocystic hyperplasia of the mucous membrane with haemorrhages, independent of the cycle, through necrotic destruction of the mucosa (metropathia haemorrhagica). In other cases delayed ripening of the follicles, leading, however, to formation of the corpus luteum, causes a prolongation of the menstrual intervals or, conversely, an acceleration of the cycle is caused by a shortened period of ripening. At the beginning of the climacteric there generally prevails (according to *Zondek's* investigations) an over-production of follicular hormone, which gradually changes to an under-production. Nevertheless, there are numerous deviations from this,

so to speak, physiological course.—As we know, the ovary is in close relationship with other endocrine glands, which are in turn affected by a disturbance in ovarial function. The change in the function of the pituitary gland may be called characteristic for the climacteric. It can easily be proven that the anterior lobe of the pituitary body releases more gonadotropic hormone, which, surprisingly enough, contain in the climacteric only that portion which stimulates the ripening of the follicle (Prolan A) and not the portion which stimulates the formation of lutein as in the sexually mature woman. As yet we do not exactly know which symptom of the climacteric stands in relation with this altered function of the pituitary body. It probably serves to assuage and gradually rid the woman of the effects of abolished function. It is certain, however, that during the climacteric another hormonal function of the anterior lobe of the pituitary body is very important: the release of a thyrotropic hormone which activates the thyroid and stimulates it to increased activity. In experiments on animals we observed increased thyroid hormone similar to women after castration or in the climacteric, and a large part of the complaints in the climacteric are similar to those of hyperthyreosis: palpation of the heart, congestion, tachycardia, sweating, tendency to spasms of the nonstriated muscles (intestines, ureter, bile-ducts), tremor, and vasomotoric disturbances. At the beginning of the climacteric proliferation of the thyroid tissue with increased secretion can be demonstrated also anatomically. This hypersecretion gradually passes over to a condition of functional rest with a tendency to hypothyreosis (even to myxoedema), and finally the aspect of senile involution presents itself. This entire development does not always proceed uniformly. At any rate there exists the disposition to hyperthyreosis during a great part of the climacteric, and with corresponding constitutional disposition, Graves's disease quite often arises.—Hypertonia is another symptom which often predominates during the climacteric. It becomes especially conspicuous if an essential hypertonia had previously existed. The inclination to increased blood pressure, however, can be considered a characteristic peculiar to the climacteric. We do not yet know whether the hormone of the posterior lobe of the pituitary gland plays any role. It is more probable that the elimination of the ovaries leads to increased function of the adrenals and increased secretion of adrenalin.—Finally, there is a tendency to obesity in the climacteric; not at all, however, in all cases, but only where there is a predisposition to adiposity. There is as yet no

explanation for the fact that the climacteric so appreciably furthers the arisal of obesity in such cases. The attempts to find a metabolic hormone in the ovaries have failed. I am inclined to accept insufficiency of the anterior lobe of the pituitary body as the cause (analogous to the hypophyseal adiposity, the adiposogenital dystrophia). Most likely insufficiency of several or all endocrine glands results in deposits of fat.

Therapy: Many women require no treatment during the climacteric. Often, however, haemorrhage, congestion, sweating, sleeplessness, etc., urgently necessitate a therapy, and the alleviation of these disorders also has a good effect on the disturbed psychic condition. The first thought of the physician is usually the administration of follicular hormone, as a substitute for the decreased ovarial function. This is only indicated in cases of intense or protracted haemorrhages, but it cannot get the menses, which have gradually begun to cease, to start again. For cases of climacteric meno-or metrorrhagia, Progynon has been an especially good remedy which, as a benzoate, has a protracted effect, increases the proliferation of the endometrium as well as the contractibility of the uterus. This results in the acceleration of the shedding of the functional tissue and the curtailing of the hæmorrhagic period. Thereby the cycle again becomes more regular. It is much more difficult to affect the hyperproliferation of the endometrium, the glandulocystic hyperplasia; administering corpus luteum hormone mostly fails here. But in such cases an abrasion is usually necessary, alone from the point of view of differential diagnosis (carcinoma ?), and this, in turn, mostly has a beneficial therapeutic effect too, if followed by treatment with follicular hormone. Of course, other preparations of this hormone, as Follikulin-Menformon, Unden, etc., may also be used; only the correct method of application is important. The hormone must be administered during the proliferating phase, *i.e.* from the 4th to the 14th day after menstruation; then a total dosage of 30.000—40.000 M. U. (mouse units) usually suffices. The path chosen for the administration is not decisive; oral administration is as often successful as parenteral.—The vegetative-nervous symptoms (congestion, perspiration, spasms, obstipation, sleeplessness, neuroses) due to thyroid dysfunction are favourably influenced through the antagonist of the thyroid hormone, Diiodtyrosin, in tablets of 0.1 gm., 1 to two times daily for 2—3 weeks. This cure is repeated with corresponding intervals.—The climacteric rise of the blood pressure is not constant but is subject to nervous influences. The complaints are best

neighbouring districts of Ramnad and Tinnevelly, proposed Col. T. S. Shastri, I.M.S., President of the Tinnevelly Association to the chair.

The following case reports were given:—"Strangulated hernia with removal of gangrenous gut and making fæcal fistula and later closing the fæcal fistula; distended uterus with absence of vagina due to retention of menstrual discharge—in this case complete hysterectomy with removal of ovaries was advocated; and tetanus; and another case of lockjaw due to carious tooth simulating tetanus". There was discussion on these cases.

The following resolution moved by T. S. Shetty of Ramnad District and seconded by P. A. S. Raghavan of Trichinopoly, was carried unanimously by the gathering:—"This combined meeting of the Ramnad District, Tinnevelly District and Madura Medical Associations heartily approves the action of the Ministry in abolishing the L. M. P. Course and converting the Madras Stanley Medical School into a College".

The next resolution moved by T. S. Venkataraman of Madura and seconded by V. Sriramachandran: *viz.* "The members of the Madura Medical Association be converted into a Branch of the Indian Medical Association and that the Governing Body be requested to take necessary steps in the matter" was, after a speech from the Chair, passed unanimously by the Madura members.

Papers on Nutrition by Dr. H. S. Thomas of Madura and on The Incidence of Malaria in the Cumbum Valley by R. Krishnaswami, were read.

The chairman before closing the meeting called on Dr. T. S. Shetty to move the following:—"This meeting of the Ramnad and Tinnevelly District and Madura Medical Associations, requests the Ministry of Public Health to the Government of Madras to encourage the Indian Medical Industries by insisting the Medical Stores Depots to purchase their requirements from Indian-Made Goods". After a speech from the chairman, regarding the rapid and marked progress in the quality of Indian Manufacturers which compare favourably with other foreign products, the resolution was put to the house and was adopted with acclamation.

In winding up the meeting, Col. Sastri remarked that the gathering was very unique on account of its large number and the Associations of four southern districts taking part in the function and hoped that such gatherings will take place every now and then.

Members of the Madura Medical Association with Dr. T. S. Sivaramakrishnan of Ramnad District and with the help of Mr. P. Krishnaswami Sastri and other friends, staged a Tamil adaptation of Molliere's *Mock Doctor*, which was appreciated by the audience including the public of Madura.

With the final scenes of the drama, the proceedings came to a close by about midnight.

The November meeting of the Ramnad District Medical Association was held on the 20th November, 1937 at the S. M. S. High School, Karaikudi with the President of the Association, Captain B. Dayananda Rao, in the chair.

The Secretary announced that the Managing Committee which met earlier that evening had recommended that:—

(1) "This Association be made a branch of the Indian Medical Association. Also the members may be classified into two groups, one—Regular Members who become automatically members of the Indian Medical Association; two—Associate Members who are only Associate Members of the Ramnad District Medical Association without eligibility to vote in business matters".

(2) "This Association be made into a branch of the Indian Medical Association forthwith and the Secretary be authorised to remit Re. 1/8/- per paid member being the half yearly dues to the Indian Medical Association and also communicate the addresses of these members".

(3) "This Associatson requests the Government that in the new Madras Medical Council Act to be passed by the Madras Legislature, in the elected members to the Council, proper and proportionate representation of the following groups of practitioners: (1) Independent Medical Practitioners. (2) Rural Medical Practitioners and (3) Municipal and Local Board Employees be given, in the election according to their electoral strength".

After some discussion, these recommendations were approved.

T. S. Shetty, K. S. Srinivas and such other members of the Association, who may attend the coming Conference (XIV All

which if carried out is likely to be detrimental to the very principle of the scheme which he has so much at heart.

Anniversary of the Tinnevelly District Medical Association.

K. Rama Ayyar, M. B. B. S., *(Andhra), Secretary and Treasurer, writes* :—

"The Anniversary of the Tinnevelly District Medical Association has been provisionally fixed for celebration on the penultimate Saturday in January 1938. The exact date will be notified later on.

2. A Grand Medical Exhibition will be held consisting of Surgical Goods, Medical Appliances, Drugs, etc.

3. Firms who are interested are requested to kindly send in their Representatives with articles. Stalls are given free.

4. All correspondence on the subject should be sent to the Secretary and Treasurer, The Tinnevelly District Medical Association, Palamcottah."

All-India Medical Medical Licentiates' Association.

Dr. U. B. Narayana Rao, General Secretary, writes :—

I

"Dr. T. C. Basu Chaudhury, a Licentiate Medical Practitioner, Eye Surgeon from Agra, has been invited by Dr. P. Bailliart, Chairman of the International Association for prevention of Blindness, to attend the General Assembly of the Association to be held in Cairo this month in connection with the XVth International Ophthalmological Congress. He has done some original research work in 'Trachoma' and has submitted the same for their consideration together with a report regarding "Blindness in India", a general survey of the same.

II

The Scientific Research Committee of the All India Medical Licentiates' Association, has awarded a Scholarship of Rupees Two-hundred to Dr. A. N. Roy, B.A., L.M.F., Clinical Pathologist of the "Indian Institute for Medical Research" Calcutta, for working on "Cultivation of Malarial Parasites".

The Scientific Research Committee of the All India Medical Licentiates' Association has also decided to award a Cash Prize of Rs. 100/- (rupees one hundred) for the best article on "Tuberculosis in India" which should include a general survey of Tuberculosis laying more stress an 'Prevention'. The Essay should not be more than one thousand lines of foolscap paper size and should reach Dr. Murari Lal Sahib, Tikonia Kothi, Agra, latest by the 31st March 1938. Essays received after the date will not be examined. The best paper selected will be published in the Indian Medical Journal and the winner will be awarded a Certifieate of Merit together with the Cash Prize. All the members of the All India Medical Licentiates' Association are eligible to compete. The following gentlemen have been selected to be the examiners of the papers:—(1) Dr. P. K. Sen, M.B., M.D., Ph. D., T.D.D., etc., of Jadanpur Sanatorium, Bengal; (2) Dr. B. K. Sikand, M.B.B.S,, D.P.H., Organising Secretary, King George. Thanksgiving (Anti-Tuberculosis) Fund, Delhi. (3) Dr. Murari Lal, L.M.P., Late Lecturer of Pathology, Medical School, Agra. (4) Dr. U. B. Narayan Rao, L.C.P. & S. Editor, Medical Digest and Indian Journal of Venereal Diseases and Member of the Medical Council, Bombay.

Any further communications on this subject may be addressed to Dr. T. C. Basu Chaudhury, Secretary, Scientific Research Committee, A. I. M. L. Association, Prasadpura House, Agra.

Signs and Symptoms and Differential Diagnosis of Leprosy.

W. F. Joseph, M.B., B.S., *Leper Hospital, Chevayur, writes in reply to a criticism made in 'Leprosy in India' regarding the relationship between nerve and skin leprosy* :—

There is a curious inter-relationship existing between nerve and skin leprosy. The greater the involvement of the skin with leprotic infiltration and acid-fast bacilli, the less the affection of the nerves and vice versa. In a purely nerve ease, we are unable to detect micobacterium leprae by any known method. By this, I mean we are unable to find the presence of the acid fast bacilli, but we do find involvement of the nerves with granulomatous changes and other clinical manifestations sufficient to classify the case as one of leprosy.

In the beginning of the disease, nerve lesions predominate and so also in the end. Disturbances of sensation as either anaesthesia parasthesia, hyperaesthesia or sensation of pains and

needles or a combination of one or more of these symptoms appear. They tend to show that the seat of mischief is in the nerves. Some leprotic involvement of the nerves in varying degree and extent does occur and this lepromatous change in the nerves is interstitial in character to start with, affecting mainly the connective tissue sheath. There is hyperaemia and leucocytic infiltration of the sheath and the septa between the bundles of nerve fibres. These changes being first limited to the perineurium the nerve fibres are pressed on, causing a temporary block of the external stimuli in varying degree and character. But later, fibroblasts accumulate and proliferation of the fibrous tissue becomes well marked constricting the nerves causing damage to the axis cylinder processes and the myelin sheath causing neuritis of the paranchymatous form.

It is a known fact that leprosy never starts with acid-fast bacilli in the skin. Leprosy comes from within outside. The very fact that the incubation and prodromal period in leprosy is a prolonged one bears evidence to this fact. The first seats of mischief may be liver, spleen, lymph glands, bone marrow or the nerves. They are the arena where the title fight for leprosy tabes place between the defensive mechanism of the body and the invading organisms. If in this fight the former fails, then evident signs of leprosy begin to show themselves.

In leprosy, it is an accepted fact that greater the resistance of the patient, the less the involvement of the skin and the number of bacilli and vice versa. What this standard of resistance is, one does not know for certain and cannot define and if one attempts to define it, it is only hypothetical. Affection of nerves in various degrees can be seen in different individuals and a corresponding disturbance of sensation can also be noticed. In the same individuals if their resistance fails, then we find gradual involvement of the skin and the first noticed disturbances of sensation disappear. This cannot be due to any other cause than the transmission of the causative factors from the nerves to the skin surface and the occurrence of a metamorphosis of the causative organisms by the operation of an unknown cause. The how and what of it we do not know for certain. Most probably the organisms become more mature and the soil becomes more fertile and suitable for their growth and development to attain the acid fast quality. The converse of this also may be true. When the soil is less suitable, the organisms assume more resistant forms confining themselves to the nerves having a special affinity to them causing nerve block. When they find a more fertile soil in the skin they take their position there and assume acid fast form. Thus we find a transference of causative factor from the nerve tissue to skin tissue producing different effects.

In cutaneous leprosy, the first change noticed is hyperaemia of the superficial skin. This is due to irritation or in other words an attempt at defence to the foreign invasion. Vaso-dilatation takes the place of vaso-constriction that first caused hypopigmentation in various degrees because the melanin pigment of the skin could not establish itself uniformly for want of proper circulation of blood in the affected parts. When hyperaemia occurs, exudation of plasma and leucocytes result and cause irritation of sensory terminals and these being many in numbers ramifying the whole skin surface, become hypersensitive to touch. Thus the phenomenon of the spread of infection can only take place from the original place in the nerves. This distribution also gives relief of pressure to the nerve trunks first affected and there is a corresponding anaemia of the compensatory type due to peripheral hyperaemia. Sensory stimuli are thus allowed to pass without hindrance and we notice the return of sensation in cutaneous leprosy re-establishing itself.

This is the evidence in justification of my statement given in your special number, which I found criticised in the "Leprosy in India" for want of evidence.

BOOK REVIEWS

Diseases of the Nose, Throat and Ear.—*By I. Simson Hall*, M.B., F.R.C.S.E., etc. 1937. Pp. 423, illustrated. Calcutta: Butterworth & Co., (India), Ltd., Avenue House. Price Rs. 7.

This has been written to meet the requirements of the busy general practitioners, and as such elaborate details of the diseases of Ear, Nose and Throat have been omitted while the common affections have been fully described. A feature of the book is the short anatomical description at the beginning of each chapter that would help the reader to recapitulate his knowledge of anatomy of the part to follow. The book is copiously illustrated and the illustrations are good and useful. It is sure to be welcomed by all general practitioners.

Wheeler and Jack's Hand Book of Medicine.— *Revised by John Henderson*, M.D., F.R.F.P.S., 1937—10th Edition: Pp. 703. Calcutta: Butterworth & Co., (India), Ltd., Avenue House. Price: Rs. 8/8-

The 10th Edition of this popular Hand Book of Medicine has been thoroughly revised and re-written, with much new matter added so as to make it up-to-date and be in keeping with enormous advances in Medicine. The section on Immunity has been omitted to give room for new matter, though the size of the book is a little larger than its predecessors. The print and the get up are good and we have no hesitation in saying that the present volume would continue to be popular among the students and practitioners.

Elements of Surgical Diagnosis.—*By Sir Alfred Pearce Gould.* 1937 Eighth Edition, *Revised by Eric Pearce Gould.* London: Cassell & Co. Ltd., Pp. 718 with 22 Plates. Price: *sh.* 10/6.

The eighth edition has been completely revised and made up-to-date. Some of the features of the new edition are the incorporation of the value of X-ray examinations in the correct diagnosis of the various surgical conditions, namely, the use of intravenous Pyelography, X-rays in the diagnosis of Meningioma, of subphrenic abscess and intestinal obstruction. The chapter on intra-cranial lesions and that on the complications of infection of the air sinuses have been brought up-to-date; change of nomenclature in surgical pathology like Osteoclastoma for Myeloma, and Ewig's tumour, Lympho-granuloma-inguinale and infective mononeucleosis have also been included.

CORRIGENDUM.

The Antiseptic, Vol. XXXIV. No. 12, Page 1226, line 35.

For 'cauterised', *Read*, 'catheterised'.

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