

The Madras Medical Journal

The Official Journal of the Madras Medical Association.

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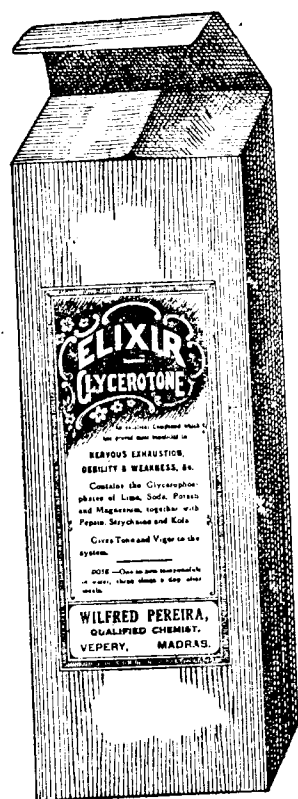
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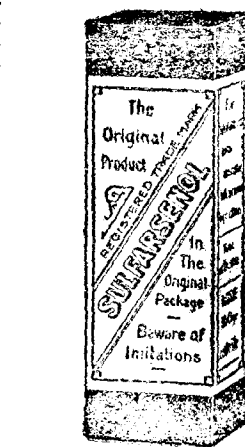
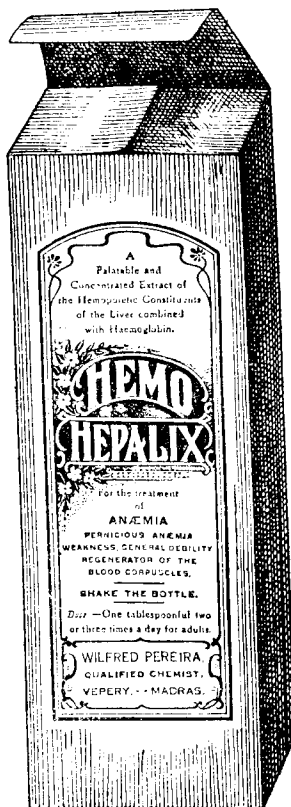
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EDITORIAL NOTICE.

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The Madras Medical Journal

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Osteo-chondritis Juvenilis

BY N. MANGESH RAO. M.B.C.M., F.R.C.S.E.

This is a non-inflammatory affection involving the ossifying nucleus of a cuboid bone, short bone or an epiphysis and occurring at the time of their greatest development.

The first of these to be noticed was in connection with the tubercle of the tibia by Osgood in 1903, and Schlatter in 1908. Koelher (1908) described a similar condition affecting the tarsal scaphoid and patella. Legg, Calve, and Perthes described a similar affection of the upper epiphysis of the femur (1910). Similar affections of other epiphyses were added by other observers. It soon became evident that these affections were closely related.

The condition may affect either the primary centre of ossification of short bones or the secondary centres appearing in the epiphysis of long bones.

A. Primary centres.

1. Vertebrae in the first decade (Calve)
2. Patella before puberty (Koelher)
3. Ribs do
4. Clavicle do

5. Pelvic girdle before puberty
6. Carpals.
7. Tarsals except calcaneus, and rarely an accessory scaphoid.
8. Mandible.
9. Sternum.

B. Osteo-chondritis affecting secondary centres.

1. Vertebrae after puberty (Scheuermann)
2. Ribs do
3. Clavicle do
4. Patella do
5. Pelvic girdle do
6. Femur (Legg, Calve and Perthes)
7. Tibia (Osgood and Schlatter)
8. Fibula.
9. Calcaneus (Servere)
10. Meta-tarsals (Freiberg)
11. Phalanges.
12. Scapula.
13. Humerus.
14. Ulna (Panner)
15. Radius.
16. Metacarpals.

The condition appears only in bones developing in cartilage. It is not seen after the epiphyses have all united with diaphyses. It is more common in healthy active boys and occurs between the ages of 5-15 years at the time of the greatest development of the ossifying centre. It may occur in girls but is not so common.

Etiology.—Many theories have been suggested to explain the condition. It is now generally accepted that the lesions are manifestations of a systemic affection (Hartley). Each of the lesions is associated with a definite age, the period of life at which the particular nucleus is actively developing. No epiphysis in the body is exempt from it and the pathological change is the same, only being modified by the particular situation (Christie). More than one lesion may be present at the same time. The condition may also be bilateral. Tubercle and syphilis have conclusively been ruled out. Calcium and phosphorus content of blood are found normal, ruling out rickets. There are no signs of endocrine deficiency or dysfunction.

Infection theory has for its support the fact that several surgeons have obtained positive cultures from material removed at operations. The cultures were of staphylococcus. But others have obtained negative results. Under the microscope the bone tissue from the site shows no signs of infective inflammation. Nor have any of these cases ended in suppuration. A doubt therefore arises that the positive results might have been due to contamination.

Leriche and Polichard explain it as due to Vasomotor changes. Increased circulation produces rarefaction of bone, the increased circulation being due to trauma of nerves. This theory is not accepted as bone sclerosis is seen with rarefaction as in the neck of the femur.

Theory of aseptic embolism.—Von Axhausen's theory of aseptic embolism and necrosis ending in minute compression fractures from slight traumata, has been discounted. It is impossible to conceive of its occurring at certain definite ages and particular sites, or that it could be bilateral as in the case of the head and neck of the femur or tibial tubercles. If embolism of the artery to the head of the femur occurs, why should similar changes be seen in the neck simultaneously? It is also difficult to explain the widening of the neck of femur.

Traumatic theory.—Trauma apparently plays an important part in the causation of the lesion. Rapidly growing bone cells are physiologically weak (Man). If at the time of rapid growth a static imbalance occurs either from increased stress or strain or a decreased capacity to withstand strain, a derangement of the normal process of growth is likely to result. This may result in irregularities of growth or small compression fractures as a result of slight trauma. Schmoral and Harrenstein have independently shown that an over-load on the spine causes flattening of intervertebral discs with tension of their fibrous walls. Owing to this tension, the cartilage cells proliferate, and break through the fibrous walls and grow into epiphyseal cartilages and invade the vertebral bodies. It is conceivable that under abnormal stress and strain similar proliferation of cartilage cells and invasion of the already calcified areas may take place. Therefore trauma in the form of increased stress and strain is an important factor and clinically it exists at all epiphyses owing to insertion of muscles or tendons.

Pathology.—In vertebral osteo-chondritis proliferation of and invasion by cartilage cells into the body of a vertebra and breaking of

epiphyseal cartilage has been noted (Schmorl and Harrenstein). Key found islands of cartilage just distal to the epiphyseal cartilage in cases of cervical coxa vara and in severe cases he found haemorrhagic necrotic areas with fibrous replacement of bone marrow. Zemansky found in early cases of Perthes' disease islands of cartilage in the capitellar epiphysis, and haemorrhagic and necrotic areas with destruction of the epiphyseal line. With advancement of the condition, fragments of dead bone become surrounded by granulation tissue, and followed by replacement by fibrous tissue. Man found experimentally, that under the influence of abnormal stress, changes occur in the endo-chondral ossification zone especially of the epiphysis. In the epiphyseal cartilage there is an irregular widening of its proliferating zone. In the diaphyseal side there is an increased formation of spongy bone on the concave side and absorption with formation of fibrous tissue on the convex side, in the neck of the femur. In the epiphyseal areas in which circulation is sufficient the reaction consists of a lamellar deposit of bone, while in areas with insufficient circulation there is an absorption and even necrosis of bone and marrow.

To sum up, the changes that occur are.—(1) destruction of epiphyseal cartilage, (2) islands of cartilage are found in the already ossified areas, (3) as the condition advances haemorrhages and necrosis—evidence of trauma—become more and more marked.

Symptoms.—The disease is more often found in boys but is not rare in girls especially the spinal type. Patients are generally in good health and practically never actually ill. All the symptoms are mild. Sometimes there may be no symptoms but the developing deformities attract attention. The clinical features are mild compared to the pathological changes seen in roentgenograms. Onset is gradual and there may or may not be any history of trauma which is usually of a mild nature. The age of onset is parallel with the age of most active growth of the affected epiphysis. X-ray pictures show a widening of the epiphyseal line. There are areas of rarefaction and condensation in the ossifying nucleus and the outlines are indistinct, giving the entire picture a hazy mottled appearance. The bony areas show a moth eaten appearance and the outlines of the already ossified portion become irregular. When reparative changes set in, there is condensation and reformation of the lamellar structures.

But the gross deformities such as Coxa, Plana, Kyphosis and Scoliosis, etc., remain.

Prognosis.—Is good as regards life and ossification of epiphysis. But the gross deformities that usually set in should be prevented by appropriate treatment with orthopedic appliances.

Osteo-chondritis of head of femur.

The disease was described by Legg, Calve' and Perthes and is known by their names. It usually occurs between the ages of 3-12 years and more often in boys than in girls. (4 : 1.) Secondary osteo-chondritis is also common after reduction of a congenital dislocation of the hip.

Symptoms.—It usually has an insidious onset but is sometimes acute. The general health may be indifferent. History of trauma may or may not be given. If onset is acute there may be slight fever with pain and tenderness. But usually there is only pain and spasm. The first symptom is a limp on the affected side with pain and tenderness. There is also muscular spasm and the thigh may be flexed and adducted. Pain and tenderness may disappear but spasm and limp persist. The child also complains of stiffness of the joint. If the pain returns the limp becomes worse. In the course of a few weeks a slight wasting of glutei may be noticed. Abduction and internal rotation are slightly limited. The great trochanter appears more prominent. Trendelenburg's sign is often present (on standing on the affected limb the healthy hip goes up).

X-ray appearances.—In the early stages nothing is shown. But later the ossifying nucleus of the head shows areas of rarefaction and later it appears flattened and fragmented into several pieces. These fragmented areas may appear flask-shaped with their mouths directed towards the epiphyseal cartilage. The neck of the femur appears thickened and shortened and the thickening is greatest near the epiphyseal line. The epiphyseal cartilage-line appears distorted. In a few cases fragmentation may also be seen in the upper lip of the acetabulum.

When these changes are taking place if the patient puts weight on the limb deformity of the head of femur results. This may take on "the cap type" or "the mushroom type" (Calve).

The mushroom type is milder. Chief complaint is a limp without pain and there is very little wasting of glutei. The movements at the hip joint may be almost normal. But where the epiphysis has migrated, abduction and internal rotation are limited.

The cap type runs a much more severe course. There is a great deal of fragmentation of the epiphyseal bone-nucleus. The neck is shorter and more rounded at the upper angle. In a few cases the epiphysis may appear almost obliterated. There is shortening of the limb and marked limitation of movements at the hip.

In both types where the head is deformed and migrated Calve's sign is present—the head can be easily felt in Scarpa's triangle and femoral pulsation is easily felt.

Differential diagnosis has to be made from tuberculous coxitis, coxa vara, congenital and acquired irregularities of the femoral head, epiphyseal separation or fractures in children.

As the disease progresses the clinical course and X-ray findings are diagnostic. Some cases of adolescent coxa vara are undoubtedly due to unrecognised osteo-chondritis of the upper femoral epiphysis.

Treatment.—Recovery follows in 12-24 months regardless of treatment, but a deformity may be left behind. If deformity is marked or progressive the affected limb should be held in moderate abduction by a short plaster spica of the groin for 6-12 weeks followed by a light Thomas's hip splint for 3-6 months. If malacia is shown in roentgenograms, further rest in Thomas's caliper splint is advisable. In some cases there is a danger of arthritis following the condition. In severe cases Whitman's reconstruction operation may give the best results.

Osgood-Schlatter's disease.

This is a secondary type of osteo-chondritis affecting the tibial tubercle. It occurs in well developed athletic boys about the time of puberty (12-16 years.) It is known as "rugby knee" or "cadet's knee." It has been frequently observed in cadets as a result of kneeling at drill. The symptoms may follow either direct injury or after violent exercise in which the knee has been smartly extended.

Symptoms.—The patient complains of aching and pain in the part after exercise or climbing and loss of speed in running. The discomfort may be slight or severe enough to cause limping. The part may be tender and swollen. Usually the tubercle becomes definitely enlarged. Active extension of the knee causes pain in the region of the patellar ligament. There may be similar changes seen in the upper epiphysis of the tibia at the same time.

Roentgenogram shows irregularity in shape as well as fragmentation of the tibial upper epiphysis.

Treatment.—The condition is self limited and recovery takes place without treatment. In milder cases a cross strapping meeting over the tubercle is enough. In more severe cases flexion of the knee is prevented for a few weeks by plaster casing. After it is removed massage, with radiant heat followed by active movements hastens recovery.

Osteo-chondritis in the foot.

Primary scaphoiditis (Koelher's disease) is one of the most common of the primary type. It is twice as common in boys as in girls. As the ossification centre of the scaphoid appears about the age of 4-5 years the disease occurs usually between 5-12 years.

Symptoms.—History of trauma is unusual. The child complains of pain and walks with a limp. Pain is increased by walking but relief is obtained by walking on the outer border of the foot. There is local tenderness and swelling. X-ray shows the ossifying nucleus reduced to half or quarter of its normal size, and irregular in shape. There is also increased density and the normal architecture is lost. The spongy cortical portions are indistinct. Gradually fresh bone develops round the dense nucleus. In a couple of years the bone may return to its normal shape and size. (It is advisable to take roentgenograms of both feet for comparison).

Treatment.—When pain is present the foot is put in plaster casing for 3-4 weeks with moderate elevation of the long arch of the foot. This is followed by application of a soft inner sole with support for the long arch and the instep is raised by quarter of an inch. Calcaneo Apophysitis (Severe's disease)—is the only example of secondary osteo-chondritis of the tarsal bones except that of accessory scaphoid in rare cases.

Symptoms.—It occurs in very active boys of 8-14 years of age. History of direct trauma is unusual. Patient complains of pain on walking which may be severe enough to cause a limp. Tenderness of the back part of the heel, and limitation of dorsiflexion with pain when tendo-Achillis is put on the stretch are present. X-ray shows a widening and cloudiness of the epiphysis of the os calcis. The epiphysis is often enlarged, irregular in outline with areas of condensation and rarefaction.

The condition has to be diagnosed from other causes of painful heel as bursitis, tendonitis, etc.

Treatment.—Local pressure by several strips of adhesive plaster passing round the heel may give relief. The heel of the shoe is raised by $\frac{1}{4}$ - $\frac{1}{2}$ inch and a soft felt or rubber pad is placed under the heel. The symptoms subside when the epiphysis unites with the os calcis.

Osteo-chondritis of metatarsals (Freiberg's disease, second Koelher's disease).—This is more frequent in girls of 10-15 years. It may follow on a strenuous game of tennis or a long walk on high heeled shoes. As the first metatarsal has a proximal epiphysis, it usually escapes. The second is more commonly involved than the rest, as it bears the brunt of the stress of body weight.

Symptoms.—Pain and tenderness near the heads of the metatarsals especially on walking. There may be also some swelling on the dorsum at the level of the heads of the metatarsals. Plantar flexion of the foot limited and painful.

X-ray appearances.—The head of the metatarsal appears flattened, irregular, with areas of condensation and rarefaction. This sometimes gives the appearance of a fracture. The cortex of the diaphysis usually shows thickening.

Treatment.—A transverse leather bar $\frac{3}{8}$ inch thick is fixed to the shoe just behind the position of the heads of the metatarsals.

Osteo-chondritis of Patella—It usually affects the primary centre of ossification at the age of six (Koelher). Sometimes a second centre exists for the patella at the lateral side of the primary one. This appears at puberty and may become involved (Larson, Johanson) at the same time as the tubercle of the tibia. When both centres exist side by side the condition may be mistaken for a vertical fracture of the patella, but it is usually bilateral.

Symptoms.—Pain and tenderness are present. The pain may sometimes be referred to the tubercle of the tibia or *vice versa*. This is due to a tendonitis at the attachment of the patellar ligament to the margin of the patella or tubercle of the tibia. Similar changes may be found in the condyles of the femur, the osteo-chondral line showing irregularity in the osteoid portion.

Treatment.—Rest in plaster casing for a few weeks depending on the intensity of the symptoms and radiographic appearances. Later, radiant heat, massage, and active moments are given.

Osteo-chondritis in the upper limbs.

This is not so common as that in the lower limbs as the stress of body weight is not felt here. Epiphysitis of the humeral head has been observed in cases of congenital dislocation and other birth injuries to the shoulder. Panner has reported a secondary type in the elbow, usually due to injury. Primary and secondary types may occur in the wrist and hand.

Vertebral Epiphysitis.

It is more frequent in the dorsal vertebrae. There are two periods of active growth in the vertebrae. The first period extends from the first to the sixth year during which rapid growth of the primary centre of the body of the vertebrae takes place. Osteo-chondritis affecting this is called the "Infantile" type. The second period is from puberty onwards for about six years, when the epiphyseal centres show most growth. This type is known as the "Adolescent" type. It starts earlier in girls (10-16) than in boys.

The infantile type extends from 1-6 years involving the primary centres. It occurs in early life and is liable to cause greater deformity than the adolescent type. In all cases of round shoulders and pain in the back in children this condition should be looked for. The spine may be tender and the condition may simulate Pott's disease. Many cases of Pott's disease supposed to have been cured rapidly have been proved to be of this type. Very young patients may have an awkward gait. There is an early mottling and irregularity of the contour of the vertebral bodies, especially the lower dorsal ones. The bodies appear wedged shaped and often almost completely absorbed. Angulation of the spine at the site of greatest absorption may occur. In the final stages

scoliosis occurs and the mottled appearance decreases. In untreated cases the deformities become permanent. These early spinal deformities may be mistaken for Pott's disease or rickets.

The adolescent type is more common than the former. It is often a cause of round shoulders, and sometimes it is mistaken for Pott's disease. Backache, malaise and pain in the hips may be complained of. Deformity of the spine is the chief sign. It is more common in girls.

X-ray appearances.—The secondary centres are represented by small triangular bodies at the antero-superior and antero-inferior margins of the vertebral bodies. Normally the outline of the vertebrae should be regular and distinct, with inter-vertebral discs of equal density and thickness throughout. If the inter-vertebral spaces are cloudy no significance is attached unless the vertebral bodies are mottled and irregular in outline. In osteo-chondritis the intervertebral spaces are cloudy and seem to blend with the general mottling of the vertebral bodies. In early stages the epiphyses are often enlarged and irregular in outline. The margins of the vertebral bodies are irregular and indistinct. In some cases they may appear completely destroyed as in Pott's disease. Even at this stage the patient may be without symptoms although deformity exists. Later, from the moth-eaten mass, the sclerosed vertebral bodies become better defined. In this stage the bodies show clearly their fragmented borders as well as their wedge shaped deformity. There is no doubt that more than one place of osteo-chondritis can be found in the same patient.

Treatment.—Indications for treatment are prevention of deformity, correction of deformity that has already taken place, relief of pain and muscular spasm, and improvement of general bodily posture. When pain and spasm are the chief symptoms, absolute rest in bed should be given on a Bradford frame bent at 20-30 degrees from the horizontal to produce hyper-extension of the spine. The angle of the frame should lie opposite the apex of the spinal curve. This will produce hyper-extension of the spine, but it may have to be done gradually. When pain and spasm have completely subsided the patient may be allowed to be up with a plaster jacket or a spring back-brace. Sleeping on the frame at night should still be carried on till all deformity has disappeared and there is uniform density and outline of individual vertebrae. Those patients who have only spinal deformity without pain require recumbency on the hyper-extended frame for several hours during the day and at night until correction has been obtained. Corrective exercises should be prescribed

for producing hyper-extension of the spine so as to restore the normal spinal curves when pain and spasm have completely subsided or are absent.

Note.—This article is a summary of articles that have appeared in different journals. Bibliography is omitted owing to its long list.

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OF LIVER EFFICIENCY

By K. C. PAUL, M.D.,

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Enzymes which possess the power of hydrolyzing fats are widely distributed in the body. They are generally known as *lipases*. But the lipolytic ferments of the tissues may be *esterases* rather than true lipases: they seem to split readily esters of the lower fatty acids—ethyl butyrate but not neutral fats. Whereas esterases could be demonstrated in almost every tissue in the body, including the blood and the liver, true lipases are demonstrable only in the digestive fluids secreted by the gastric and duodenal glands, and the pancreas.

The lipase or more correctly esterase met with in blood plasma is probably derived almost entirely from the formed elements of the blood; the red and white corpuscles of the blood are known to contain lipolytic ferments. When there is tissue injury and breaking down of tissue cells, tissue esterases may be liberated and allowed to pass into the blood stream; in such conditions the lipase (esterase) content of the plasma would be increased.

Whipple, Mason and Peightal¹⁶ employed the technique of Loevenhart for the determination of the lipolytic activity of blood plasma. The method is rough and none too accurate, but can be readily carried out in the clinical laboratory. It depends on the power of lipase (esterase) to split ethyl butyrate and liberate butyric acid; the amount of the acid set free forms the measure of lipase activity, and can be determined by titration.

Whipple and his associates studied the lipase activity of blood plasma in various experimental and clinical conditions. They found that the lipase content of normal plasma was more or less constant; the amount of butyric acid set free by 1 c. cm. of plasma corresponding to 0.2 to 0.3 c. cm. of the decinormal acid. When the liver was injured by

* The term 'lipase' is employed here to describe not only true lipases such as pancreatic and intestinal lipase but also the esterases.

chloroform or hydrazine phosphate, the lipase content of the plasma rose considerably. Whipple says, "It may be stated with considerable certainty that liver necrosis, however produced, in a liver previously normal, causes a characteristic rise in blood lipase—a rise of five to eight times the normal. This reaches its maximum after 12 to 24 hours and may remain at this level for 24 hours or longer in fatal cases. The curve of blood lipase then falls slowly to normal on the 6th or 8th day with repair of the injured parenchyma. Small liver injuries cause less marked rise in lipase and prompt return to normal." This rise in blood lipase is due to the escape of the liver enzyme from the injured hepatic tissue into the circulating blood; for when such an injured liver is cut off from the circulation the lipase activity of the plasma remains at the normal level. Moreover, Quinan⁹ has noted that the lipase content of the liver, poisoned with chloroform, is much less than that of the normal organ.

The clinical findings of Whipple and his associates are also of considerable interest. Such conditions as pneumonia, peritonitis, leukaemia, and various infections are associated with a rise in blood lipase; this rise is no doubt due to the breaking down of the tissue cells and consequent liberation of the tissue lipases (esterase) into the circulating blood. The blood lipase is high in eclampsia, evidently due to the areas of necrosis met with in the liver; as in the other toxæmias of pregnancy the lipase content of the blood does not show any variations from the normal. Whipple has suggested that lipase estimations could be made use of for the differentiation of eclampsia from them. In acute yellow atrophy and cholangitis the lipase content of the blood is invariably high; the liver is diffusely involved in both these conditions. Some cases of abscess and carcinoma of the liver also give high values for blood lipase; the rise being related to the extent of involvement of the hepatic parenchyma. No variations in the lipase content of the blood are met with in early obstructive jaundice; but when the condition has been of some standing there is a slight increase, of course, because of the coincident liver cell damage. In advanced cases of hepatic cirrhosis the blood lipase has been found to be reduced.

A comprehensive study of blood lipase has been made by Rowntree, Marshall and Chesney¹¹ in a variety of liver conditions. They did not find the estimation of blood lipase of much help in the early diagnosis of hepatic disease. Guijarro⁴ says that the lipase of the blood is an unreli-

able indicator of hepatic insufficiency. The same opinion has been expressed by De Wesselow¹⁵; where increase in blood lipase was found the condition had far advanced and the clinical picture was sufficient to lead to an accurate diagnosis. Wilson¹⁷ also came to the same conclusion. But Mackenzie Wallis¹⁴ found that blood lipase estimations were useful in the detection of liver damage due to arsenobenzol medication. Berkeley, Dodds and Walker¹ were able to differentiate the toxæmias of pregnancy with hepatic damage from those without liver involvement by this procedure.

The view that when tissues are injured tissue lipases escape into the blood is substantiated by the recent work of Rona and others. They employed the method of Rona and Michaelis, which depends on the lowering of surface tension caused by the hydrolysis of a soluble ester like tributyrin, for the determination of the lipase activity, and studied the effect of such substances as quinine and atoxyl on the lipase of normal blood serum and of watery extracts of the liver. Rona, Petow and Schreiber¹⁰ found that quinine inhibited or destroyed the lipase in normal serum, but had no effect on that in the liver extracts. Arguing that in liver injury the lipase of the liver would escape into the blood and become demonstrable in the serum, they investigated the nature of the lipase in the serum of a patient suffering from liver disease and found it to be quinine-resistant. Quinine-resistant lipase is present in the kidney also.

Meyer and Jahr⁸ have confirmed the findings of Rona and his associates. They studied the sera from a large number of healthy individuals and from those suffering from a variety of diseases, hepatic and otherwise, but not renal disease. They found that the sera of normal individuals and of those with disease other than that of the liver did not contain quinine-resistant lipase; but such lipase was present in the sera from cases of liver disease. In hepatic lesions of a stationary nature, like cirrhosis and carcinoma, quinine-resistant lipase was not constantly met with in the serum; but it was invariably noted in all cases where there was recent liver cell damage. The sera from cases of haemolytic jaundice did not show quinine-resistant lipase. They conclude that, when renal disease can be excluded, the presence of quinine-resistant lipase in the serum is evidence of hepatic disease; that such lipase will be present only when there is anatomical change in the liver cells and the liver cell damage is progressive in character; that the

test does not measure the extent of the hepatic damage; and that the demonstration of such lipase in the blood serum does not indicate change in liver function independent of damage to the hepatic parenchyma.

Vanysek and Felklova¹³ however found that in cases of hepatic cirrhosis and tuberculosis the blood serum contained quinine-resistant lipase; they noted such lipase in the serum of diabetics also, but not of the younger subjects of this disease.

Lowenberg and Kwilecki⁷ noted quinine-resistant lipase in the serum in disease of the gall-bladder, inflammations of the liver, and severe renal disease, but not in carcinoma or passive congestion of the liver. Dimitrijevic³ demonstrated quinine-resistant lipase in the serum in 42 out of 63 cases of tertian malaria he examined. He attributes the presence of such lipase in these cases to involvement of the liver.

Bulcher² studied the nature of the lipase in the sera of patients suffering from various psychoses and found it to be quinine-resistant in some cases; he concludes that in these cases there is injury to the organs and the tissue lipases enter the blood stream.

Kromeke⁶ found that liver injury induced by X-rays or other means was not associated with the presence of lipase resistant to quinine in the blood serum. Simon¹² does not hold that quinine-resistant lipase comes from the liver, or that its demonstration has any value in the diagnosis of hepatic lesions.

Katsch⁵ has shown that the determination of the lipase in the blood serum is of value in the diagnosis of disease of the pancreas. The lipase in the serum in pancreatic disease is not quinine-resistant, but atoxyl-resistant. Simon says that the demonstration of atoxyl-resistant lipase in the serum indicates pancreatic involvement.

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Therapeutics of Goat's Blood

BY J. DHAIRYAM, L. M. S.

Before entering into the subject proper, I would say a few words in preface.

The goat as an animal spends its time mostly in open air at all seasons of the year and feeds upon a variety of vegetable material. It is spoken of as being immune to Tuberculosis. Though direct infection has resulted in their getting the disease particularly in domesticated animals, they do enjoy an immense relative freedom from tuberculosis.

The selection of the goat is an important item. Young and vigorous goats are the best for taking blood. The jugular area is shaved, cleansed, washed and painted with iodine. Pressure over the jugular vein in the sternoclavicular area makes the vein stand prominent. Blood is removed in a syringe and injected soon into the gluteal muscle 10 c.c. (adult dose) at a time. The interval between injections is 8 days. At a stretch 5 injections may be given.

How I began.—Two years back I had a bad case of tuberculosis of the lungs. He had an evening temperature of 103° to 104°. His sunken eyes, prominent cheek bones, bony frame, persistent cough and anxious look revealed that he had not many days to live. He had regular lung signs. He had also a distressing haemoptysis. He brought about a pint of blood at a time. I tried various injections and medicaments at least to arrest bleeding. Nothing was successful. In the end I tried 10 c.c. of goat's blood intra-muscularly. The result was astonishing. Bleeding stopped completely in 24 hours, temperature began to fall. He developed an appetite and in a week's time he was looking tremendously improved; after the 2nd injection, the improvement was very good. He ate nourishing food and digested it. I gave him 4 injections and the supplementary drug was Calcium Lactate. The patient has been keeping good health these two years and has been employed as a black-smith in a Government institution and turns out good work. A good number of other cases have been treated in this manner with success.

Another remarkable case was that of a woman aged about 30 years bed-ridden for over 6 months, carried in a stretcher from the road to the hospital, unable even to sit up and troubled with a hacking cough with nummular sputum full of tubercle bacilli. She had a regular evening temperature; the right lung showed consolidation and cavity formation. For all practical purposes she was too far gone into the grips of tuberculosis. A young man who assisted her for a month developed haemoptysis, evening temperature, loss of appetite, dry cough and a systematic reduction in weight. Goat's blood injections were given not at intervals of a week but at intervals of 15 or 20 days. In her delicate state of health, I was afraid that she could not stand the reaction. I was never worried about serum reactions. I always take care to give Calcium Lactas and adrenaline chloride, when necessary. In this way, her temperature was reduced, her cough became less troublesome and she began to put on weight. Though she had relapses in temperature, etc., during the course of the treatment, she was discharged a healthy stout woman attending to her needs herself and without any tubercle bacilli in her sputum. The course of the treatment extended to a period of 4 months. I have later received a report from her medical officer that she was continuing to do well.

Lupus.—A European woman had thickening and reddening of the skin which started at the tip of the nose. Gradually it spread to the whole of the nose and cheeks giving a butterfly appearance. It had brown scales at the edges. It had not ulcerated. It had lasted for nearly 5 years. I gave the patient four goat's blood injections weekly. Gradually the whole thing disappeared and she was alright. For the next 6 months and more, she was free from the disease. The previous history of the disease was all follows:—

It was diagnosed to be lupus in residency hospitals and other premier institutions. She had it treated with X-ray and light exposures. She had an auto-vaccine prepared and injected. Her relief was then only temporary. But the goat's blood injection had effected a permanent change in her appearance even to the extent of making her look younger and brighter.

Daily evening rise of temperature for over two months and tuberculous glands prominent on both sides of the neck:—A deep scar at the side of the neck revealed a previous operation for the removal of

the tuberculous glands. Four goat's blood injections were given. Temperature came down by the first injection. Glands were reduced in size and the patient put on weight. Digestion was improved. Of course, I supplemented the treatment with fomentations of the ground leaves of "Agatigrandiflora" over the glandular swelling. She has been keeping good health for the next 9 months.

Tuberculosis of the hip-joint.—In a young man of 24 there was pain over the hip region, rigidity, defective movement and well-marked muscular wasting. He had also enlarged tuberculous glands in the neck. Two injections were given with no noticeable improvement, but the 3rd injection effected a great reduction in pain, movements became easier, rigidity was less, but the patient did not undergo the full course of treatment.

Tuberculous meningitis of an advanced type with tuberculosis of the lung.—One goat's blood injection was given and there was slight improvement. On the 8th day, I gave the 2nd injection. Unfortunately for the patient, he was too weak to bear the strain, and collapsed subsequently. After the injections there are reactions in the disease. For instance, in lung tuberculosis there is increased cough, higher rises of temperature and some prostration. This is to be distinguished from serum reaction. There is itching with urticaria, slight giddiness, headache and some difficulty in breathing. Adrenalin chloride injection and calcium lactas were freely used to combat the same. In the case mentioned above, I am of opinion that the injections would have benefited him, if he had come early for treatment.

A persistent case of whooping cough in a child which developed into regular asthmatic attacks when the child was about 7 years old.—Two injection of goat's blood 5 c.c. were given. Eight days after the 2nd injection reaction of the disease set in. He had severe sneezing, cough and wheezing. This cleared up after a few days. The child has been better for the last 6 months. Previous to this, it used to get attacks almost once in a month.

Asthma.—In one case of Asthma, I gave one injection; the result was encouraging but the patient did not continue the treatment. In another case, where I had given special treatment, one goat's blood injection was given when the patient had a recurrence. After this, the patient

has been keeping quite well even during the rainy weather which is usually the time when he gets frequent attacks. Here the treatment requires further trial.

Tuberculous abdomen.—One interesting case where goat's blood was successfully given, was in a Brahmin woman aged about 30. Her previous history was that she was gradually getting weaker. Her digestion was completely impaired. She had dull pain over the abdomen. She had no night sweats but had intermittent fever. Later she was always feeling warm. She had diarrhoea off and on and later it became persistent. Her abdomen was protuberant. There was a soft swelling in the right iliac region. When she was admitted, she had her feet swollen and dorsum of hands were also swollen. She could not move of herself and she had to be carried. Five goat's blood injections were given. After every injection she had reactions due to the disease. She had increased temperature, her abdomen became reddened and she had more pain. After a couple of days her temperature became normal, abdomen became lessened in protuberance and redness passed off. Her diarrhoea got gradually better. Now, her digestion has improved, abdomen looks and feels normal and she moves about. She is almost fit to be discharged. The duration of the disease when she was admitted was 6 months. Now she has been under treatment for over 6 months. Her lungs have always been free. Her swelling over the hands and legs has passed off and she feels much better.

Haemophilia.—I gave 3 injections to a boy aged 12 years suffering from this disease. After the first injection, there was spontaneous bleeding and his knee joint swelled up. I always consider such reactions of the disease as evidence that the disease is affected by the injections. Gradually the swelling was reduced by symptomatic treatment. After 3 injections the quantity and duration of bleeding had been reduced by one-half. The treatment is not yet completed.

INFERENCES.

- (1) Goat's blood injections have a toning action and a rejuvenating influence.
- (2) They have a direct action on tubercle-bacilli.
- (3) Coagulative power is increased and bleeding tendencies are arrested.
- (4) Calcium deficiency is made up.

The cases are too few for any definite inference to be made about the efficacy of the treatment, but we welcome the observations.—*Editor.*

The Incidence of Syphilis (Latent) AMONGST THE GENERAL POPULATION OF THIS PRESIDENCY

BY N. S. NARASIMHAN, F.R.C.S.,

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Various high figures were given before the Social Hygiene Council Meeting in January 1927 and popular lay books comment on the high incidence of Syphilis. A routine serological examination of all the patients admitted into the First Surgeon's Wards of the General Hospital was done as far as possible from April 1927 to end of June 1931 at the instance of Col. Bradfield and Col. Croly. The figures for 1929 were published in the annual report of the General Hospital and for 1930 are being published in the latest annual report. Frankly venereal cases are not admitted into the surgical wards. The work done was of a routine nature and a great deal of time was spent on collection of specimens and tabulation of results.

The serological tests were done at the King Institute, Guindy.

...	M.	F.	Ch.	H.	Moh.	I. C.	A. I.	E.	Year.
Negative ...	891	162	12	883	59	54	56	13	1927 &
	236	25	...	259	8	12	11	1	1928
	668	77	9	654	18	33	46	3	1929
* Total } 1068	...	...	...	...	...	...	...	...	1930
cases. }	439	8	...	422	10	13	2	...	1931
	2264	272	21	2218	95	112	115	17	...
	+	1068	2557	...	...	...	...	...	...
Total ...	3	6257	...	...	...	...	...	...	...
Positive	91	13	1	92	5	7	1	...	1927 &
Weak.	40	3	...	39	1	1	1	1	1928
	68	11	1	70	6	3	1	...	1929
* Total } 26	...	...	...	...	...	...	...	...	1930
cases. }	18	1	...	17	1	...	...	...	1931
	217	28	2	218	13	11	3	1	...
	+121	...	...	...	...	...	...	...	...
Total ...	3	68	...	...	...	...	...	...	...

...	M.	F.	Ch.	H.	Mh.	Ich.	AI.	En.	Year.
Rositive Moderate.	67	4	2	55	5	7	3	...	1927 &
	14	3	...	15	2	...	...	...	1928
* Total } 52	30	7	...	34	...	1	2	...	1929
	...	...	...	...	...	...	...	...	1930
	15	2	...	...	...	...	...	...	1931
	123	68	2	104	7	8	5	...	...
	=	193	+ 52	=	245	...	...	...	...
Positive Strong.	47	8	...	48	4	2	1	...	1927 &
	5	...	...	4	...	1	...	...	1928
* Total } 26	17	6	...	15	5	3	...	...	1929
	...	...	...	...	...	...	...	...	1930
	11	1	...	12	...	...	...	...	1931
	80	15	...	...	...	...	...	...	...
		111	Total	...	...	...	...	...	...

* Figures for 1930 are not classified.

Neg. + ++ +++
3627 368 245 121 = 4361

Deducting 1267 unclassified, 3094 is classified as follows

	M.	F.	Ch.
Neg.	2264,	272,	23
+	217,	28,	2
++	123,	68,	2
+++	80,	15,	0
	2684,	383,	257

Positive weak is classified as doubtful. Moderate and strong reactions are regarded as indicative of syphilis. It works out at 7.6% for males; 21.6% for females; 7.4% for children; 11.82% of the patients admitted into general surgical wards show serological reactions for syphilis. Dr. C. J. Thompson in her preliminary enquiry on still birth and neonatal death in India quotes the figures for 1929 of this ward with kind permission of Col. Bradfield.

The following is her own observation on pregnant women in the Madras City.

One thousand blood tests were carried out on pregnant women in the City of Madras (both Kahn and Wasserman).

Hospital A—500 cases 8.2% positive syphilis.

B—250 „ 17.1% „
C—250 „ 12.2% „

The average 12.5% was in close accordance with Bombay figures.

Of this the following information also may be of value; the patients from the urban area were 820 and the non-urban area 959: Of this

+ + + + +

Urban 59 35 27 = 7.4% of urban patients.

Non-urban 82 53 40 = 9.7% of non-urban patients.

There is a slightly higher percentage amongst the patients from non-urban areas which may mean that they are not efficiently treated. Whether past syphilis has any influence on other diseases or not *per se* can be inferred from the following figures: 5.9% in cancer out of 425 patients but about 8% in cancer of tongue; 4% in Dyspepsia cases out of 857 cases; 4% in Surgical diabetes (26 cases); 6% in Surgical tuberculosis (166 cases) gave serological moderate and strong reactions.

Acute Epiphysitis of the Hip Joint.

BY N. S. NARASIMHAN, F.R.C.S.

It is described as epiphysitis because the infection usually involves the extremities of bones and because the epiphysis is often detached or destroyed. Of 52 cases in which but a single joint was involved the hip was affected in 26. In some instances it is secondary to an infected wound, suppurating ear and the like. It may follow pneumonia or one of the exanthemata.

The influence of age is a vital factor from the standpoint of morbid anatomy and a recognition of this must determine to a large extent the treatment. In 1874 Thomas Smith of St. Bartholomew Hospital had accurately and exhaustively described as a definite clinical entity the acute arthritis of infants specifying the main characteristics as follows:—

- (1) Age—within the first year, often within the first few weeks or first few days of birth.
- (2) Onset—sudden, often preceded by traumatism.
- (3) Progress—Rapid to suppuration, limited to the epiphysis and the joint cavity; The diaphysis always escapes.
- (4) Involvement of large joints—hip, shoulder knee, etc.
- (5) Complete destruction of the whole epiphysis, leading to shortened, mobile or flail joints.
- (6) Termination—Rapid, either favourable or fatal. 13 out of 22 cases in Smith's series were fatal.
- (7) Neither syphilis nor tubercle are causal agents.

The morbid anatomy of the upper end of the femur of the infant as disclosed by the X-ray examination affords a clear explanation of these clinical manifestations. The head of the femur, being almost entirely composed of cartilage in infancy, is destroyed by inflammation and suppuration and the epiphysis rapidly disappears.

The nature of infection is either staphylococcal or streptococcal, occasionally due to pneumococcus. In this country it follows commonly Small-pox. Destruction of joints following small-pox is enormously common; about a dozen cases are seen with multiple epiphysitis and arthritis every year. A secondary infection is probably the actual cause. The infection is generally through blood stream and the disease is primarily limited to the joint cavity but as the space in the joint cavity is limited, the head of the bone is bathed in pus. The cases are not diagnosed early especially in the hip.

Treatment is early and free incision and efficient drainage, the limb being supported by some form of splint. In neglected cases a spontaneous opening forms and suppuration ordinarily persists for several months; the epiphysis is usually destroyed in whole or in part and in consequence the joint becomes somewhat loose and flail like. After recovery the joint should be supported for a time in extension and abduction to prevent displacement. If the head of the femur has been destroyed there is usually upward and backward displacement. This induces flexion and adduction of the limb and great disability.

In such cases one should, under anaesthesia, force the femur forward to the neighbourhood of the anterior superior spine and fix it there for a long period by the application of Lorenz Spica bandage applied with the limb in an attitude of abduction and hyper extension. The operation is similar to the Lorenz method for replacing the congenital dislocation.

Acute arthritis of joints treated by this method are quite successful.

The prophylaxis of the troublesome sequelae of the disease is early efficient treatment.

Sequelae of the disease in infancy:—

- (1) Complete loss of the head of the femur say, in a child of 15 months of age.
- (2) In older children aged five years: At this age the head is mainly osseous but not entirely so; the patient is often seen with a discharging sinus. Separation of the head from the shaft of the femur is found, a considerable portion of the neck having been absorbed. There may be some periostitis in the upper part of the shaft. There is often a breach of continuity, partial or complete in the femoral neck.
- (3) In still older children aged eleven years: There may be history of fever and pain in joints for which the child was bed-ridden.

The child comes with a dislocation of the hip with the usual deformity : flexion, adduction, slight external rotation of the hip. The problem here is a dislocation of the upper end of the femur, the femoral head itself undestroyed so far as stability and mobility are concerned but associated with *it is the absence or softening of the upper lip of the acetabulum.*

(4) In an adult : Complicated by a pathological dislocation.

Indications for treatment :— For (1) : (a) No operative interference, (b) to correct the deformity already present by forcible abduction and encasing in plaster of paris for a short time, (c) to fit an appliance which, whilst limiting the tendency of the femur to slip upwards, would allow of as much exercise of function as possible.

For (2) : The object of treatment is to promote reproduction of bone whilst preventing further shortening. Success in this objective will leave a strut to the shaft, and will eliminate the possibility of the greater trochanter slipping upwards upon the ilium ; extension in an abduction frame. There is still a risk of the trochanter slipping upwards and an ankylosis in good position will be the ultimate result.

For (3) : Subcutaneous tenotomy of adductors with reposition of the head in plaster in slight abduction. The patient will get a painless stable, mobile hip.

For (4) : Some operation may be required if the limb is to become painless and capable of the functions of support and progression. In the adult the femoral head is still more resistant to the influence of inflammation and infection and except in those cases in which inflammation begins as a definite osteitis, very little destruction of the head follows, the brunt of the disease falls upon the acetabulum, whose upper lip yields and allows the head to escape upon the dorsum ilii. By the time healing has occurred there has usually been so much shortening of the ligaments and capsule of the joint and so much inflammatory material filling up the acetabulum as to make reposition and replacement impossible.

The following cases were seen during the year. I am indebted for the X-Ray prints of these cases to Dr. S. Pillay, Radiologist, X-Ray Institute, Madras.

Case No 1.—' R ' 9 years F. C. This child was known to me when it had acute arthritis in 1924 in another Hospital. It was incised and the joint was freely drained and kept under extension. The parents go

ACUTE EPIPHYSITIS OF THE HIP JOINT : Narasimhan.

For Explanation, see text.

Case No III. (Right Hip).



Case No I. (Right Hip).

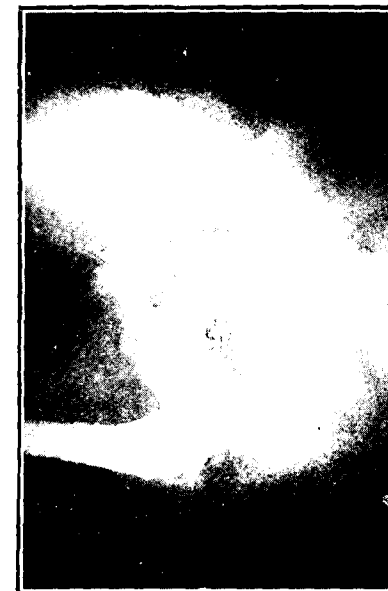


Photos by the Government X-Ray Institute, Madras.

Case No IV. (Right Hip).



Case No II. (Right Hip).



the child discharged from the hospital in 1924 and the child subsequently was admitted into the General Hospital. The head of the femur is absorbed and is dislocated upwards. Many operations were done and there was a pathological fracture of the upper third of the femur. The fracture united. At present the joint is ankylosed; the acetabulum is very shallow and there is new bone formation on the inner side of the acetabulum. There was a shortening of $2\frac{1}{2}$ inches, which was corrected at present by boots. The child is poor and cannot afford frequent renewal of boots. No operative procedure could be contemplated in this case.

Case No. 2.—'S' aged 8. F. C. Was admitted as a case of tuberculous disease of the hip joint. But the child was moving about and playing without any pain. No history of any infectious fever; but the child had an acute swelling of the hip with fever, which gradually got well without any treatment. At present the head is absorbed (Rt. Hip), the neck is projecting as a stump horizontally for half an inch. There is no dislocation of the bone in this case as this horizontal projection of the neck is hitching against the acetabulum. Why that portion of the neck alone remains unabsorbed cannot be explained by any anatomical peculiarity of the structure of the neck or of its blood supply. The structure of the neck is thicker below than above. This projection is seen in another case also mentioned below. Certain peculiarities in the upper part of the neck as some thickening are said to be due to the habitual squatting posture of Indians. Examination of a large number of our dry specimens do not reveal this fact.

The ages of the two patients are 9 and 8 and both of them are females.

Case No. 3.—'N.' 8 years M.C. Cases Nos. 3 and 4 were under treatment in two other hospitals. They both come back with a sinus in the anterior aspect of the groin due to operative interference. An incision for drainage of the hip joint must be a lateral or posterior incision. An anterior incision in the middle of the groin does not drain the joint efficiently. The head of the femur has disappeared. The neck is stumpy— $\frac{1}{2}$ inch in length. Epiphysis of the great trochanter is smaller than usual. Bone is dislocated upwards; but an acetabular cavity is formed. The sinus was opened and the joint drained. Attempts were made to bring the stump into the acetabulum and fixed in plaster of paris. The sinus healed up after 6 months' treatment. The stump has not entered into the acetabular cavity but no operative measures are indicated at present.

Case No. 4:—'N.' F. 14 years—I.Ch. Was admitted for flexion of right hip. There was a scar on the anterior aspect of the groin. It was operated on 4 years ago in a district hospital, where she remained for a year. X-Ray now shows absorption of the head of the right femur. Arrest of development of the shaft of the bone with upward dislocation is present. There is distortion of the pelvis with scoliosis. The neck is projecting as a stump at its upper part for half an inch. As the flexion deformity was being corrected by extension the original scar showed signs of inflammation and an abscess was formed, which was opened and drained. The wound healed up and the child was fitted with a boot to correct the shortening. Treatment of a case of this type becomes difficult, as the original infection has become recrudescant after 4 years.

Case No. 5: For which no X-Ray print is attached was that of a boy aged 8, who had acute arthritis of the left hip and osteomyelitis of the lower end of the right femur. There were several sinuses present over both the regions. The left hip was flexed and adducted and the right knee was flexed to a right ankle. Several sequestra were removed; the right knee was extended; but the left hip did not improve under extension. The child was originally treated for 6 months outside the hospital by others.

Case No. 6 was that of a young man aged 20 admitted into the medical wards (another Hospital) and was being treated for an unclassified fever. There was swelling over the right hip which was not recognised and when he was transferred to the surgical side there was dorsal dislocation of the hip. The joint was drained. Streptococcus was isolated from the culture and he developed abscesses in other situations. After a prolonged illness he recovered. He is able to do his work efficiently and is a good boxer. He belongs to group 4; there was no necrosis of the head of the femur.

There were two other cases in children aged two to three years, where the limb was completely flail. Similar cases occur in other joints also. Shoulder and elbow are the next common types especially in small pox; but there were two cases in children of about five years where all the joints were affected.

I am indebted for reference No. 1 to Dr. Kini.

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History of Obstetrics*

BY P. RATNASAMY, B.A., M.D.

The first period of obstetrics well extends from prehistoric times to the first century B.C. or up to the rise of Imperial Rome. This period is what I would designate as the Religio-Philosophic period. In this period I would place Sushruta and Charaka of Indian fame and Hippocrates of Cos of Grecian fame. I have said "Religio-Philosophic" because I think that religion played not only a main part in the social activities but also on the scientific acumen of these generations. The healing art was administered by the priests of the Temple. However it was not altogether Esculapius and his cult that dominated; very valuable and detailed observations were made during these centuries but only they were subordinated to the religious instinct so that religion and philosophy were very largely mixed up with the treatment of diseases. Philosophers like Pythagoras Alcamæon and Empedocles all wrote about medicine. Plato indulged in writing about medicine and kindred sciences. To quote from Plato regarding the malpositions of the uterus: He says the "vulva and matrix of a woman is an animal ravenous after generation, which being baulked of its desire for any length of time is so enraged at the delay and disappointment that it wanders up and down through the body obstructing the circulation, stopping the breath and producing all manner of diseases." To see how far religion has played an important role in obstetrics one has to turn to Charaka Samhita. One chapter is an incantation to the gods and their representatives on earth so as to ensure a safe delivery. To quote one "when the 9th month has set in, on an auspicious day, having poured libations on the sacred fire, having also first caused a cow and Brahmins, and fire and water to be admitted therein, having presented unto the Brahmins sun dried rice in full measure as also flowers and such other articles as are productive of prosperity, having saluted the Brahmins seated on the seats spread out for them etc—when the Brahmins are repeating the words "Punnyaḥ" she (the enceinte) should enter the lying-in room. Again, at the time of delivery the women in attendance should whisper the following words in her ear:—

* A paper read before "The Medical Officers' Association" Government Hospital for Women and Children, Egmore.

"May Earth, Water, Ether, Fire, Wind, Vishnu and Prajapathi always protect thee that are with child in thy womb."

In Chapter VIII of Nidana Sthanam (section of Pathology) of Susrutha Samhita the author deals with malpresentations, their causes, symptoms, etc. Among the causes are mentioned riding, pressure on the womb, partaking of extremely bitter, pungent parchifying articles, dysentery, etc. The author gives eight varieties of malpresentations:

(1) Two thighs are first presented and sometimes it comes with a single leg flexed up which probably corresponds with frank and extended breech.

(2) The child comes with its body bent double and thighs drawn up (case of corpora conduplicata).

(3) The child presents impacted at the head of the passage with its chest, sides or back (transverse presentation).

(4) The child presents with its arm round its head resting on the side, and the arm coming out first (compound presentation).

(5) Sometimes only the two hands, etc.

In Chapter XV of Chikitsa Sthanam (section of Therapeutics) the treatment for these malpresentations are noted. After chanting mantras he says that if the child is dead the physician should lubricate his hand with a mixture of earth, butter and some herbal juices and inserting it into the passage of parturition should draw out the foetus. Then he gives the method for extracting footling breech and transverse presentations; and for the last condition, he directs that the chest should be drawn out with its upper part, *i.e.*, the head must be made to point downward and brought straight into the passage of parturition (internal cephalic version). He also describes post-mortem caesarian section. He says that a child, moving in the womb of a mother who had just expired, should be removed by the surgeon from the womb, as a delay in extracting the child may lead to its death. Among the Romans there was a law promulgated by Numa Pompilius, known as Lex Regia which decreed that no pregnant woman should be buried until the foetus had been removed by abdominal section. Indeed there is a custom even now extent in our parts that the child is removed by section from a dead pregnant woman either before cremation or burial. Generally speaking the operation must be performed within half an hour in order to have a

reasonable chance of extracting a live child. However, exceptional cases are on record. Thus the Princess of Schwarzenburgh perished one evening in a fire at Paris and a living infant was removed from her uterus on the morning of the following day. Jivaka actually describes caesarian section in a living person. There is no mention of any instrument by which a living child could be extracted. Sushruta describes the operation of craniotomy for which he prefers a "mandalagara" (a blunt knife) to "Vridhi-patri" a sharp cutting instrument, since the latter, he fears, may sometimes hurt the mother during the operation. After perforating the skull, he directs, that the foetus should be drawn out by pulling it at its chest or at the shoulder by a sanku (forceps?). During puerperium he advises oil to be copiously applied to the genital canal.

Chapter III of Sarira Sthanam (section of Anatomy) gives among other things external signs of male, female and twin conception. To quote "An enceinte in whose right breast the milk is first detected, who first lifts up her right leg when walking, whose right eye looks larger or who evinces a longing largely for things of masculine names, may give birth to a male child while the reverse symptoms predicate a female child." He adds that an enceinte whose sides become raised and the forepart of whose abdomen bulges out will give birth to a hermaphrodite and lastly if the middle part of an enceinte's abdomen becomes sunk or divided she will give birth to a twin. Minute instructions are laid down in Chapter IX as to the diet and conduct of an enceinte and the management of the child in all its aspects including the choice of a wet nurse, education and marriage! For retained placenta, he says, that the exterior orifice of the vagina should be fumigated with the fumes of the cast-off skin of a snake mixed with mustard seed and it is a practice which we meet with sometimes even to-day in villages.

Grecian Obstetrics.

The first authenticated scientific treatise, in the west, belongs to Hippocrates of Cos who practised the healing art about 460 B. C. In his books *De Natura Mulibri* and *De Mulierum Morbis* he deals with diseases of women. Thus, for suppression of menses he orders vomits, purges and pessaries composed of wool with various kinds of powders, oil, wax, etc. For menorrhagia he advises the women to abstain from bathing and all laxative and diuretic things; he orders astringent pessaries for the vagina and cold application to the lower parts. He also prescribes poppy seed and advises cupping glasses

to be applied to the breasts. For leucorrhœa, he prescribes emetics, cathartics, asses' milk, whey and other medicines. In his first book on diseases of women he observes that if a woman at full term is in labour and cannot be delivered after a long time, the child either lies across or presents with the feet. He recognises that the head presentation is the most favourable one and remarks that the birth will be difficult when the feet present, in which case either the mother or the child or both will perish. For a case of transverse presentation he orders the child to be pushed back and turned so that it may present with the head, (internal cephalic version). He advocates embryotomy when the child is big and dead. He says "If the head presents let it be opened with a small knife and the bones of the skull being broken, extract it with a pair of forceps; after the head is delivered should the child stick at the shoulders, divide the arms at the articulations, and they being brought away the rest of the body follows." Regarding the extraction of placenta, in his book "De Superfetatione" he says "if the secundines do not come away easily the child must be left hanging to them and the woman seated on a high stool so that the fœtus by its weight may pull them along" and lest this should be too suddenly effected he orders the child to be placed on two bladders filled with water, which being pricked, the water runs out, the bladders slowly sink and gently draw the secundines away. In case the cord snaps he orders weights to be attached to answer the same purpose; he also advocates fumigating the vulva in cases of retained placenta.

Roman Obstetrics.

We now pass rapidly in series to Celsus who lived during the reign of Emperor Tiberius, Galen, etc. to Etius in the 4th century A.D., who, though he copies many things from Hippocrates and Galen has a very full and distinct account of difficult births. As a matter of fact his analysis of the causes of difficult labours are so exhaustive that I quote him in full.

Delay due to the mother.

- (1) Weakness of body and mind.
- (2) A confined uterus, narrow passage, natural smallness of parts, (corresponding to our contracted pelvis) obliquity of the uterus, inflammation or abscess or induration of parts, rigidity of membranes, premature discharge of waters, fleshy substance adhering to the cervix.

- (3) Stone in the bladder.
- (4) Extraordinary fatness.
- (5) Ankylosis of os pubis at their junctions.
- (6) Too great a quantity of faeces or urine.
- (7) Enfeebled constitution, greenness of years attended with weakness and inexperience.

Delay due to child.

- (1) Extraordinary size of the body.
- (2) From crowding of 2 or 3 fœtuses.
- (3) From twins presenting together at the mouth of the womb.
- (4) From death of the fœtus and its tumefaction.
- (5) From malpresentations.

Miscellaneous Causes.

Very cold or very hot weather.

Arabian Obstetrics.

By the time we reach the V century the Græco-Roman civilization had reached the lowest level; Mediterranean Europe was in the throes of a series of invasions by the Huns and the Goths from the North. The Emperors at Rome and at Byzantium could not effectively check the invasions owing to their mutual jealousies. The Muse of science finding the soil uncongenial left the shores of Europe to be born again in the deserts of Arabia. By the seventh century the great upheaval in Arabia had settled down and an empire rose which extended from the Bay of Bengal in the east to the Atlantic ocean on the west. Seats of learning were established extending from Baghdad to Cordova. It was indeed the hey-day of Islamic culture. The great Islamic physicians Rhazes, Avicenna and Albucassis—flourished between the IX and XI centuries. Of the three, Avicenna whose Arabic name is Ibu-Sina may be said to have been an intellectual prodigy. Avicenna lived in the XI century and his "Cannon" was taught in Europe and Asia till the end of the Middle Ages. In all preternatural cases, he says, that the head ought to be reduced to the natural position; but should this be found impracticable he advises to deliver by the feet. Of all preternatural positions, he says, the easiest is when the fœtus presents with the feet. He recommends all the old methods of assisting natural labour and if the

woman cannot be delivered by these methods, he orders a fillet to be fixed over the head; if however the fillet could not be fixed he directs to extract with the forceps; and should all these fail, to open the skull. Here we may conjecture that the forceps is used to extract a live baby, failing which we are asked to open the skull. These brief remarks about Avicenna would be lacking without reference to his poems. The researches of Dr. Browne and Prof. Jackson would indicate that in all probability the "Rubaiyat" ascribed to Umar Khayyam was really the work of Avicenna as Umar is said to have post-dated Avicenna by a century. The next Arabian writer was Albucassis who lived in the XII century and who gives descriptions and figures of instruments then used in midwifery. He figures two kinds of forceps:—one straight and the other curved by which a living child could be extracted and which seem also to have combined to some extent the properties of the cephalotribe as he directs us to use them to *crush* the head should the efforts fail at extraction of a live child.

European Obstetrics.

After the XI century, medicine began to decline in Asia. The reason is not far to seek. Barbarous Europe having settled down after the invasions from the north turned to wage a series of wars against the Saracenic Empire; this led to a series of crusades; consequently the fine arts were neglected in Asia. Western Europe, however, was ripe for the germination and vigorous growth of Arabic culture which appeared as a constellation in the south of Spain. The rays of intellectual light came to Europe at an opportune moment in its declension and despite the prevailing bigotry in Christendom, the culture of the Cordovan Caliphate gradually overcame many objections and its intellectual heritage became that of Europe generally. After the fall of Byzantium in 1453 Greco-Arabian medicine permeated Europe through Spain on the west and Byzantium in the east. Obstetric knowledge was however confined to the methods followed by Islamic physicians and no original advance was made. Meticulous care was taken to translate most of the Grecian and Arabian works and the subject-matter was closely followed.

The next writer who was of any importance in obstetrics was Ambroise Paré who lived in the sixteenth century and who was the royal physician to the Bourbons. It was he who anticipated Herman's

dictum "when in doubt or difficulty pull down a leg." In 1668 Francois Mauriceau of Hotel Dieu of Paris published a treatise on "midwifery." His method was similar to both Paré and Guillmeau but fuller than either of them. It was he who fully exploited the use of the fillet and a "tire-tete" whose function was akin to a crotchet. Smellie thinks he was ignorant of forceps. Contemporary with Mauriceau were the doctors Chamberlain, the elder and the younger. Dr. Hugh Chamberlain, son of the younger Chamberlain translated Mauriceau into English and commenting on the use of the fillet he observes that his father, his brother and himself were in possession of a much better contrivance. Medical history would have it that Hugh Chamberlain being hard pressed for money agreed to give away the secret of the forceps, but being reluctant to part with the whole of it, gave only one blade of the forceps to the public. Soon however the other blade was found out. This is the short straight forceps.

English Obstetrics.

I now confine my remarks to the growth of obstetrics in England only as it would become tedious to trace the growth in the other countries of Europe. However, as a general observation France led the way in science during those days as it does even now and English obstetrics true to the nation's tradition of conservatism and *laissez-faire*, only followed in the wake of its more brilliant neighbour.

Smellie practised in the latter half of the 18th century and published three volumes in midwifery in 1779. His second and third volumes are a compilation of cases. Reading through these books one could see the workings of an original master mind working through a maze of relevant and irrelevant matter. To quote one, regarding forceps he says "for my own part finding in practice that by following Chapman and Gregoire, I frequently could not move the head along without contusing it and tearing the parts of the woman, I began to consider the whole in a mechanical view and reduce the extraction of the child to the rules of moving bodies in different directions." These previous writers direct us to introduce the blades of the forceps where they will easiest pass and taking hold of the head in any part of it, to extract it with more or less force according to resistance. Thus in 1751, in his attempt to put his theories in practice, he made the next most important advance in forceps for he had to incorporate the pelvic curve and increase the length of the forceps. However Levret in 1747, four years

earlier than Smellie introduced the pelvic curve in France. Again it was the French obstetrician Tarnier, in 1877, who introduced the principle of axis-traction which has done so much to improve the value and general utility of the instrument. So far as British obstetrics goes Neville and Milne-Murray devised a suitable axis traction apparatus to be attached to the Simpson-Barnes forceps.

One finds it rather difficult to choose from such a book but I think I will be doing an injustice if I do not quote his inimitable description of the application of forceps. It reads as follows. "Let the operator place himself upon a low chair and having lubricated with pomatum the blades of the forceps and also his right hand and fingers, slide the hand gently into the vagina, pushing it along in a flattened form between that and the child's head, until the fingers have passed the os internum, then, with his other hand let him take one of the blades of the forceps from the place where it was deposited, and introduce it betwixt his right hand and the head; if the point of it should stick at the ear, let it be slipped backward a little, and then guided forwards with a slow and delicate motion: when it has passed the os internum, let it be advanced farther up until the lock be close to the lower part of the head. Now let him withdraw his right hand. By the same means employed in introducing the first, let the other blade be taken from the place of concealment and applied to the other side; let them be locked and the handle firmly fastened with a fillet. He must now take a firm hold with both hands and when the pain comes on pull the head from side to side continuing this operation during every pain until the vertex appears through the os externum. When the perineum bulges, then let him stand up and raising the handles of the forceps, pull the head upwards, so that the forehead being turned half-round upwards, the perineum and lower parts of the os externum may not be torn." If you had been following the narrative you would have noticed that he asks us to take out the forceps from the place of concealment. This procedure of concealing the forceps may seem strange to us—we who live in an age of advertisement of forceps. The prejudice against instrumental delivery was such in those days that I will quote you from Smellie how carefully the operator had to take care of the instruments. "The woman being laid in the proper position for the application of forceps; the blades ought to be privately conveyed between the bed and the clothes at a small distance from one another on each side of the patient: that this conveyance may

be the more easily effected the legs of the instrument ought to be kept in the operators side-pockets. Thus provided when he sits down to deliver, let him spread the sheet that hangs over the bed upon his lap and under this cover take out and dispose the blades on each side of the patient by which means he will often be able to deliver with the forceps without being perceived by the woman herself or any other of the assistants especially the female attendants." I leave Smellie at present even though he talks of Vesico-Vaginal fistulæ and other sequelæ consequent on laborious labour.

Symphysiotomy.

Older writers allude to division of symphysis pubis for enlarging the cavity of the pelvis and in 1776 Plenck performed the operation subsequent to the Cæsarian section, in a case in which he met with difficulty to extract the head since it was impacted in the pelvis. In 1768 a medical student named Sigault submitted to the French Academy of surgery a proposal for the performance of symphysiotomy. In 1773 he wrote a thesis on it and in 1777 he for the first time performed the operation on a woman named Sondiot. The case turned out favourably and the operation was warmly advocated. So high indeed was the opinion about the operation that the Academy of Surgery had a medal struck in Sigault's honour. As usual then, as well as now a prolonged and angry discussion raged on the continent. The position of English obstetricians regarding symphysiotomy is almost the same as it was at the time of Playfair. To quote him "The operations included under this heading "Symphysiotomy and Pubiotomy" are now so universally condemned as useless and dangerous that it seems scarcely necessary to do more than allude to them as interesting on account of the exaggerated value which was at one time assigned to them.

I now come to the XIX century. The century opened suspiciously and those who were awake saw signs of the dawn. The spirit of science was brooding on the waters. The most distinguishing feature of the scientific medicine of the century was the phenomenal results which followed experimental investigation. While this method of research was not new, since it was introduced by Galen, perfected by Harvey and carried on by Hunter, it was not until well into the middle of the century that by the growth of research laboratories that the method exercised a deep influence on progress.

One of the most important books to be published in the first half of the century was Collin's book on 'midwifery.' This book was a fore runner of Tweedy and Wrench and also in a way that of Jellets'. Collins was the Master of the Rotunda from 1826 for seven years, and the practice of writing a book either during or after the period was even then in vogue. In the preface he writes "the details given in the book are immediately connected with my mastership and occupied the last seven years of my residence, when I had the medical charge of the institution during which 16,414 women gave birth to 16,654 children." The book deals with natural, preternatural and complex labours, plural births, still-births and puerperal sepsis. He distinguishes two types of cases of puerperal sepsis—the fulminant or the more favourable and the asthenic or the typhoid type which is less favourable and which is more prevalent during epidemics. It is interesting to observe that the routine treatment for sepsis in those days was turpentine stupes to abdomen, leeching, administration of mercury in some form or other and warm baths; venesection was done in selected cases. To begin with, a draught containing half an ounce each of castor-oil and turpentine was given to act on the bowels, later 3-4 dozen leeches were applied to the abdomen and mercury in the form of Calomel was pushed to the limits of tolerance. In one case, he records that 308 grains of Calomel were given in a little more than 48 hours.

Playfair published his books in the eighties of the century, just after the epoch making discovery of Louis Pasteur who silenced once and for ever the theory of spontaneous generation by his brilliant researches on microbes. There is practically nothing to add to some of Playfair's essays. Thus he gives the following causes for induction of premature labour:—

- (1) Contracted pelvis—here he discusses the degrees of contraction and the varieties of contracted pelves for which induction is resorted to.
- (2) Hyperemesis gravidarum.
- (3) Tumors of pelvis.
- (4) Habitual death of foetus at full term.
- (5) Diseases as chorea, mania, disease of heart and lungs, etc.

Then follow the methods which are

- (1) Puncture of membranes.
- (2) Repeated vaginal douches.

(3) Intra-uterine injection of hot water—a dangerous process he says.

(4) Separation of membranes by a gum elastic bougie.

(5) Dr. Barne's method of dilating the os by fluid pressure.

He strongly recommends transfusion of blood for profuse post partum hemorrhage, absence of pulsation, incessant vomiting, jactitation, repeated faintings, rapid or laborious respirations and dilated and insensible pupils. To discuss these indications is beyond the scope of this paper. 1884 saw the publication of Barne's *Obstetric Medicine and Surgery* in two volumes and on going through them one fails to find anything essentially different between them and modern publications. Indeed it is nearly up-to-date except for the American contributions on the subject. The American writers were beginning to bestir themselves. The great civil war for Emancipation of Slaves was just over and the great liberator Abraham Lincoln had sealed the noble cause with his life. The times were propitious for the appearance of an Osler or Whitridge Williams.

The twentieth century had dawned and contemporaries as we are it is very difficult to assess from the past three decades the significance of our contribution. Indeed he who will predict the potentialities of the future must be a very bold man. However, though it may not be possible to assess the results we can at least state the trend of thought and the lines of work that are operating which will shape the results. To be more explicit the advance of Biochemistry, X-Rays, Radium and other mechanical devices on the one hand and the change of ideas regarding moral and social ethics on the other will play a large part in directing the progress of Midwifery and Gynecology in the future. The 19th century ideas regarding family life, procreation and civil authority are challenged and new ideas are animating the present generation. Bolshevism is an interesting experiment and we are not in a position to judge its contribution. Contraception and its concomitants, though not new, have attained a prominent place in society; also there is a tendency to interfere too often and too much with the natural course of events. Recently, an article in the *American Journal of Obstetric and Gynecology* appeared which concludes that artificial rupture of membranes at or near term has decreased the average length of labour, lessened the incidence of sepsis and does not affect maternal mortality. If we seriously believe in these conclusions, the correct procedure will be hereafter to

interfere with all women who are about full term. Regarding the moral of contraception and induction of abortion for eugenical and other reasons I have nothing to say except that whether inflicted upon the mother or upon the child it is against the precept of God and the law of Nature "Thou shalt not kill." The life of each is equally sacred and no one has the power, not even public authority to destroy it.

Secondly, the vistas opened up by Bio-chemistry, Mechanics and Radiology are so wide and limitless that we cannot judge them by the brilliant results that have been secured so far. In conclusion, talents are not wanting but only opportunities are lacking for developing the talent of the younger generation, at least in India, and it is hoped that in a short time these opportunities will not be denied to young men here.

Notes on Diseases.

THE RECURRENCE OF MYCETOMA IN AN AMPUTATION STUMP.

(By A. V.)

A Hindu male aged 30 years, resident of Nellore District was admitted into the Second Surgeon's Wards of the General Hospital with numerous sinuses around the heel, ankle and lower third of the leg through which numerous white granules could be expressed. The anterior half of the foot was absent, having been amputated 3 years ago at Rangoon for a similar complaint.

The present trouble started 2 years after the previous amputation. The corresponding femoral and inguinal glands were also found enlarged. The limb was amputated above the knee and the enlarged glands were dissected out. Microscopic examination of the granules showed mycetoma of the actinomycotic variety—thin, hairlike, branching mycelium.

The section of the tissue in the neighbourhood of the sinus showed a few suppurating areas surrounding granules of mycetoma. The lymphatic glands also showed similar mycetoma granules.

The interest in this case is that it is rare for the anatomically related glands to be invaded by the fungus. In the majority of cases of mycetoma the enlargement of the glands is due to secondary infection and not due to the fungus.

BENIGN GIANT CELL TUMOUR OF TENDON SHEATHS AND APONEUROSES.

(By M. N. P.)

Three cases of benign giant cell tumours arising from tendon sheaths, aponeuroses and fasciae were reported in the January 1931 issue of this Journal. Two more cases have come to our notice since publishing the previous cases. The first case was that of an old woman, Hindu,

aged 60 years, who had a nodule adherent to the tendons on the dorsum of the foot. The duration was 1 year. The nodule was movable over the structures below ; it was hard in some places and soft in others. The size was that of an orange.

The second case was that of a girl aged 24 years, Anglo-Indian, who had a movable tumour of the size of a hen's egg in the popliteal fossa. The tumour was in connection with the semi-membranosus bursa. The special interest in this case is that a similar mass was removed from the same site 5 years previously and was reported on as a giant celled tumour. The nodule existent at present had probably arisen from a portion of the tumour left behind during the operation 5 years back. The present mass was not adherent to deeper structures and was easily shelled out.

The microscopic sections of both specimens showed the appearances of giant celled tumours of tendon sheaths and aponeuroses :

CASES OF STRICTURE OF THE RECTUM

(BY N. S. NARASIMHAN).

Lockart Mummery in the Medical Annual of 1921 writes on non-malignant strictures of the rectum. " The commonest cause of stricture of the rectum is stated in almost all cases to be due to syphilis. Of late years this has been denied by almost all modern proctologists and it is now generally agreed that by far the commonest cause is sepsis. Indeed many pathologists now maintain that syphilis is an exceedingly rare cause. In the entire records of St. Mark's Hospital for diseases of the rectum there are only two undoubted cases of syphilitic stricture of the rectum, so that, at any rate in England it would appear to be a rare etiological factor. On the other hand it is generally agreed amongst surgeons who have practised amongst the Negro-population of America and among the natives in India that syphilitic stricture among these races is common."

Stricture of the rectum is most common at the junction of the anal canal with the rectum, may also be found 2 or 3 inches higher ; it may also be found at the junction of the pelvic colon and the rectum. In India it is commonly low down.

The following cases of stricture of the rectum were seen during the year :—

No.	Name.	Age.	Sex and caste.		Duration.	Site of Stricture.	W. R. and motion Exam.
1.	A	45	M	M	2 years	5 cm. above anal margin.	} All negative.
2.	P	30	F	H	3 years	13 cm. „	
3.	G	50	M	H	3 months	4 cm. „	
4.	T	28	F	A I	4 months	13 cm. „	
5.	R	45	M	H	6 months	5 cm.	
6.	R	30	M	H	2 years	8 cm.	
7.	T	41	M	A I	6 years	6½ cm. „	
8.	M	40	M	H	3 year	11 cm. „	

There are no specimens in the Madras Medical College Museum to study them. This year I obtained a specimen from one of the cases of stricture of rectum who died in the wards. There was general narrowing of the lumen. There was a good deal of fatty deposit on the bowel to an extent of 12 inches.

The mucous membrane is scarred and the muscular coats are hypertrophied.

The histological examination shows only chronic inflammatory changes. There is no evidence of syphilis or tubercle. No. 1 case had an enlarged spleen due to chronic malaria. No. 4 case in this series was in 1926 December suffering from amoebic dysentery and the ulcers were seen by me on sigmoidoscopic examination. Emetine injections did not improve the condition and the ulcers had to be dealt with by touching them with silver nitrate solution (10 gr. to an ounce) on 4 occasions. She remained in good health and latterly noticed symptoms for which she came under observation.

Another case not included in this series has been under my observation for nearly 15 years. Under conservative treatment there is no evidence of any stricture at present and for the last 7 years she is having no treatment for the condition.

The notion that it is due to syphilis has been fostered because some cases were noticed amongst prostitutes. French proctologists are

of opinion that the condition may be due to a streptococcal infection of peri-rectal tissues.

One male adult aged 35 was seen in 1929 with a stricture 3 inches above the anal orifice. Biopsy showed chronic inflammatory changes, with a few giant cells probably tuberculous.

Two cases of stricture of the rectum (non-malignant) on whom colostomy had been done had come, one for prolapse after 10 years and another for some other ailment. Their general health was good and nothing could be detected which could account for the pathology of the condition. This does not include cases due to infective granuloma extending into the anal canal.

ELEPHANTIASIS OF LEGS.

(By N. S. NARASIMHAN).

It is due to an obstruction of the lymphatic channels in the superficial fascia of the lower leg blocking the lymphatic drainage. Due to this blockage and to the infection present the superficial fascia becomes hard, indurated and fibrosed. The extremities are not truly oedematous. They do not pit well on pressure as is seen with the usual oedema but the tissues are more woodlike in appearance. The area involved is usually from the knee to the ankle and may be bilateral. (The supporting effect of the shoe placed tight on the foot often seems to control the infection there though often unilateral; it may involve the thigh and the upper extremities are also affected.)

It is very commonly observed that when these patients undergo an operation which confines them to bed the swelling in the leg disappears to a surprisingly great extent. This would suggest the advantage of a supporting treatment both in acute and chronic cases. Much relief and comfort can be given by very tight bandaging of the entire extremities involved with four and five inch elastic bandages. These must be wrapped unusually tight and with the extremity so wrapped the patient may go about his work. Following the attack the supporting treatment is continued by means of the bandages. If this supporting treatment is continued the attacks become farther apart and much less severe in their development. It is a wonder that a great majority of patients are willing to undergo many courses of injections (all of which are

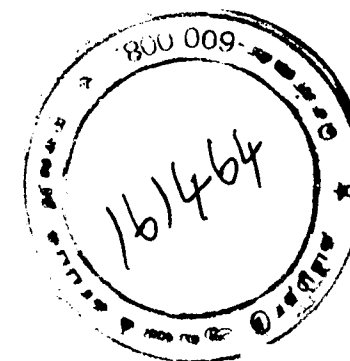
absolutely useless in my experience) but are not willing to adopt this excepting a few educated patients. A fitter who unfortunately had his enlarged groin glands excised elsewhere against my advice is able to carry on his arduous work with the aid of a supporting bandage.

I did a Kondolean operation 6 years ago on a case who recovered in 6 months but he did not use the supporting treatment. The success of the Kondolean operation rests on the re-development of the lymphatic drainage for the extremity by excising large wedge shaped pieces of this sclerosed and fibrosed superficial fascia together with sections or pieces of the deep fascia leaving the muscles exposed. It is hoped that direct and new channels of lymphatic drainage may be established from the superficial fascia directly through the muscles to the deep system. I have been watching a large number of cases done by others and I think their condition after 6 months to 2 years become worse.

SOME OBSERVATIONS ON FILARIASIS.

(By N. S. NARASIMHAN).

An attempt was made to find out how far the complications of filarial diseases are due to streptococcal infection. A leucocytic count was taken from orchitis and lymphangitis cases and it was always between 9,000 and 12,000. Blood culture at the height of the temperature was sterile. In one case of orchitis the fluid from the sac was sent for culture and streptococcus was grown. In two other cases of orchitis no microfilariae were seen but culture gave a growth of staphylococcus albus. The culture was negative in a case of chylocele; the fluid that resulted from an incision in a case of Elephantoid Scrotum was sterile. In the case in which streptococcus was grown the Leucocytic count was only 10,000. The Bacteriological investigations were done by the Bacteriologist of the Madras Medical College. These cases require more investigation before a vaccine treatment could be used as a routine.



Case Reports.

I.

SPLENECTOMY FOR HÆMORRHAGIC CYST OF SPLEEN.

Govinda Nair—aged 43 years, was admitted into the Third Surgeon's wards of the Government General Hospital, Madras, on 15-6-31 for a swelling in the upper part of the abdomen.

Previous history.—Six months previously he had a poke in the upper part of abdomen with a piece of wood. This gave him pain for a day or two. A week later it again appeared but subsided on treatment. As the pain subsided a swelling appeared and steadily increased in size. He was admitted on the Medical side of the General Hospital on 3-6-31. After a preliminary investigation he was transferred to my wards.

Present complaint.—A swelling in the upper part of the abdomen, pain and discomfort immediately on taking food, lasting for half an hour or so. Appetite was poor but there was no vomiting.

Examination.—Patient was a well nourished adult, not anæmic, tongue clean, bowels regular; he has slight pyorrhea. A swelling of the size of a cocoanut (about 5" diameter) could be seen in the epigastric and left hypochondriac area. It was fairly tense and gave a cystic thrill. Its upper border could not be felt. It moved slightly with respiration. It was completely dull to percussion and a narrow band of resonance could be made out between it and liver, but not constantly. Splenic dullness was continuous with that of the cyst. Liver appeared normal.

Cardio-vascular system.—Normal. Blood showed leucopenia.

Urine.—Sp. Gr. 1020, acid, alb. and sugar nil. Diastase 50 units.

Motion.—Total fats 19·2%, fatty acids 7·86%, neutral fats 0·54%.

A provisional diagnosis of pseudo-pancreatic cyst was made.

X-ray pictures of stomach after barium-meal were taken. These showed the stomach pushed to the right of the cyst-shadow, the cardiac end being stretched between the liver and the cyst. This position of the stomach was against a pseudo-pancreatic cyst.

Operation on 20-6-31.—A left paramedian incision 6" long was made over the cyst and it was exposed. Stomach was found pushed over to the right. The cyst wall was in direct contact with anterior abdominal wall. It was tapped and 60 ounces of dark brown fluid alkaline in reaction was withdrawn. On passing the hand into the cyst cavity it was made out to be on the outer surface of an enlarged spleen. On further exposure it was found that the cyst had formed between an enlarged spleen and the left cupola of the diaphragm. The spleen was removed after ligaturing the vessels securely with silk. The main vessels were ligatured first and then the spleen was mobilised by separating extensive adhesions to the diaphragm, etc. The spleen removed measured 8½" long and 4½" wide. Convalescence was uneventful except for slight sepsis of upper part of the wound. Patient was discharged cured on 20-7-31 with no signs of pain or discomfort on taking food and appetite very much improved.

II.

A CASE OF COLECTOMY OF PELVIC COLON FOR PARTIAL TORSION.

Abdulla, aged 50 was admitted into the Third Surgeon's wards of the Government General Hospital, Madras, on 24-6-31.

Complaint.—Pain in the abdomen on and off for about 15 years.

Previous history.—For about 15 years he had been suffering from indigestion, abdominal distension, discomfort and vomiting about three hours after food. He used to get alternate attacks of constipation and diarrhœa.

Present history.—Complained of great discomfort, distension, nausea and constipation. The discomfort became worse after food and vomiting relieved it.

Present condition.—Abdomen distended but soft, the small and large intestines appeared to stand out here and there. Certain amount of visible peristalsis could be made out. No definite tender spots or rigidity could be made out. Patient is slightly anæmic and emaciated. Tongue slightly coated. Bowels rather constipated. No history of passage of mucus or blood. Rectal examination was negative.

Heart.—Rather weak sounds. Slight arterio-sclerosis present.

Partial obstruction of the lower part of the colon was suspected but no tumour could be felt.

X-ray after barium meal.—Retention of the meal in the stomach even after 5 hours. It was therefore reported as pyloric obstruction.

Operation on 27-6-31. On opening the abdomen a long double-barelled loop of pelvic colon with a narrow scarred mesocolon was found to pass from the left iliac fossa to the right hypochondriac region where the apex of the loop was pressing on the pylorus. The loop was delivered out and was found to have undergone a half clock wise turn on the narrow base of the meso-colon. This had produced a kink at the junction of the descending colon with the pelvic colon. This was untwisted. An examination of the stomach, pylorus and duodenum showed no stenosis or ulcer. Other organs appeared normal. The mesocolon was narrow $2\frac{1}{2}$ —3 inches wide and about 12—14 inches long. It was thought advisable to resect it. This was done and an end-to-end anastomosis was done. The loop removed was about 16 inches long.

Convalescence of the patient was unexciting, wound healing by first intention. He was discharged on 18-7-31 completely free of his complaint with a soft flattish abdomen.

N. MANGESH RAO.

Extracts.

The Modern Treatment of Syphilis.

BY L. W. HARRISON, D.S.O., M.B., F.R.C.P.E., IN 'THE PRACTITIONER.'

(Reprinted from the Indian Medical Gazette, July 1931).

I propose in this article to discuss mainly the treatment of syphilis in its early stages, that is, within the first six months, because this appears to be the problem in syphilis which calls most urgently for settlement. The existing diversity of opinion as to what is necessary to eradicate the disease in its early stages must be responsible for much of the under-treatment to which great numbers of patients are being subjected at the present moment. Apart from the risks to which under-treatment exposes the patient's future health, it is the deadly enemy of progress in the campaign against the spread of syphilis because, although it may render patients non-infectious at first, this is only temporary, and the eventual result is to leave in the community large numbers of infectious persons. Infectious, too, in a way which is more dangerous than before treatment because the state of the patient is not manifested by external signs. Even to-day there are large numbers of practitioners who treat only until the serum reactions become negative, and then either wait and see if they will revert to positive or continue the treatment only with the feeble mercury by mouth for the traditional two years. It must be obvious to anyone who thinks, that the first negative serum reaction does not mean the death of the last spirochaete in any but a small proportion of cases and that, therefore, the great majority of patients treated on such lines must continue to harbour the organism in their cardiovascular systems, testicles, central nervous systems and other important tissues. It may be argued that the fact of such a patient not being cured would become manifest on the blood being tested, but only a small proportion of patients treated by practitioners who lay such store by a negative serum reaction trouble to have further serum tests.

The case of the patient whose treatment is continued with mercury by the mouth is little better because, if not cured by the energetic treatment of the first course, it is unlikely that his surviving spirochaetes will succumb to the feeble attack of a few mercury pills. As I know from

past experience of soldiers treated conscientiously with mercury for two years and from observation of later effects, the most that this is likely to do is to keep the serum reactions negative and everybody concerned in a fool's paradise.

For my present purpose I propose to use some results of treatment carried out on male cases in my own clinic, mainly to show what some forms of treatment will not do; in other words, to indicate minima of treatment.

In 1919 I formulated a programme of treatment for average cases in each of the stages of syphilis to be dealt with in my clinic, and this programme remained unaltered so far as male cases were concerned until the early part of 1928, when it was changed, as will be shown later. The unit course was as follows:—

Day of treatment.	" 914 " grm.	With Hg. grm.	or with Bi. grm.
1st	0.45	" ...	" ...
8th	0.45	" 1	" 0.32
15th	0.45	" 1	" 0.32
29th	0.60	" 1	" 0.32
36th	0.60	" 1	" 0.32
50th	0.75	" 1	" 0.32
57th	0.75	" 1	" 0.32
78th	0.75	" 1	" 0.32
85th	0.75	" 1	" 0.32
92nd	0.75	" 1	" 0.32
Totals.	6.3 g.	With Hg. 9g.	or with Bi 2.88g.

The gaps between the 3rd and 4th, the 5th and 6th, and 7th and 8th injections were to allow intolerance to declare itself. In place of " 914 " given intravenously, sulpharsenobenzene was given deeply and subcutaneously to a number of the patients. Mercury was given intramuscularly in the form of a 10 per cent. mercurial cream. It was later superseded by bismuth, given as a deep subcutaneous injection in the form of oxychloride; the dose shown in the table is the amount of metallic bismuth, the actual amount of the compound being 0.4 grm. in 4 c. cm. suspension. Potassium Iodide was given from the 57th to the 78th days.

For a case of primary-syphilis with negative serum reaction, two such courses were prescribed, with an interval of two months; for a sero-positive primary case, two such courses, followed by a 36-day, one consisting of 3 x 0.60 grm. " 914 " and 2 x 0.75 grm. in an early secondary case, the same as for a sero-positive primary plus a further course similar to that just mentioned.

The results were assessed by clinical relapses and by reversions of the serum reactions to positive, which occurred after suspension of treatment for periods varying from three months to seven years. The method of the Wassermann test which was employed was that known as No. 1 of the Medical Research Council's Special Report Series, No. 14. This method has been shown in two laboratory conferences held in Copenhagen and in a large number of comparisons in this country to be the most delicate Wassermann test which does not afford non-specific results. This is important, since a number of workers assess their results by serum tests which are by no means sensitive.

Stage of Syphilis.	Cases.	Old Course (6.3 grm. in 92 days) Serum Reactions at end of Course.		
		Positive.	Doubtful.	Negative.
Sero-positive primary ...	120	5	11	104
Early Secondary.	167	31	25	111

Cases.	New Course. (6.75 grm. in 120 days). Serum Reactions at end of Course.		
	Positive.	Doubtful.	Negative.
89	4	3	82
47	2	2	42

The broad results of the analysis were as follows: In sero-negative primary cases only the series treated with more than two such courses as that outlined above showed no relapse. The relapses in the series of seropositive primary cases which received this amount of treatment and in a small group of cases which had been treated with three such courses were altogether about 10 per cent. and the same percentage occurred in the secondary cases which had been treated with at least three full courses. I have interpreted these results as meaning that the minimal amount of treatment to be given to a sero-negative primary case is three full courses such as first outlined, and that for one which has become sero-positive, whether still primary or now secondary, at least one further course is necessary.

If this is the case, it means that, where the eradication of syphilis from a community is desired, there must be a unanimous determination to administer to every case of early syphilis not less than the amount of treatment just mentioned. The secret of success in this matter lies in unanimity amongst medical practitioners. *As long as patients continue to be told by some practitioners that a few injections are all that is necessary to cure their syphilis, they will regard lightly the advice of those who are striving to be thorough, and will continue to default in large numbers from clinics. (Italics ours.)*

Being dissatisfied with the immediate results of the scheme of treatment outlined above, I have attempted to improve it. At first I tried increasing the intensity of the course so that, with the same amount of bismuth, 8.75 grm. "914" was administered in 92 days, in place of 6.3 grm. The immediate effect of the course, in terms of negative serum reactions, was no better, and the incidence of toxic effects became uncomfortably high in spite of the precaution taken to dissolve each dose of "914" in 10 c. cm. of a 10 per cent. sodium thiosulphate. Accordingly, about 2½ years ago, in the male department of my clinic, I substituted the following:—

Bismuth, 0.32 grm. per week from 1st to 64th day.

"914" 0.45, 0.60 grm. on 1st, 8th and 15th days.

"914" 0.75, 0.90 grm. on 43rd and 50th days.

"914" 0.90 grm. on 78th, 85th, 113th, and 120th days.

As will be seen, it differs in respect of the arsenobenzene compound considerably from those usually prescribed. Its principles are that three

moderate doses of "914" (to test the patient's tolerance) are followed by an interval of four weeks and then by pairs of doses which quickly reach 0.9, but are spaced out by intervals of one month. On the other hand, bismuth is administered each week from the commencement until a total of 3.2 grm. has been given.

The immediate effects of the two types of courses on early syphilis which has become sero-positive can be compared in the following table, from which it will be seen that those of the new course have been better.

The incidence of jaundice attendant on the new course was greater until I adopted the plan recommended by Dreyfus of dissolving each dose in 20 c. cm. of 40 per cent. glucose, when it became decidedly less. It is necessary to see that the glucose is neutral. In the St. Thomas's Hospital Clinic 4 c. c.m. of 4 per cent. sodium hydrate have to be added to each 250 c. cm. of glucose. I suggest that this course deserves a wider trial. Apart from its therapeutic merits, it has advantages for migrant patients who may not be able to receive injections every week.

The minimum treatment prescribed for sero-negative primary cases is three of these courses, and for early cases which have become sero-positive, three beyond the first which ends with negative serum reactions with an interval of six weeks between the last injection of "914" in one course and the first in the next. By serum reactions is meant here the Wassermann and at least one flocculation, because in treated cases the serum often gives a positive flocculation reaction when the Wassermann is negative, and sometimes the reverse occurs.

The choice of bismuth preparations is one which must puzzle many practitioners. The number of preparations on the market is legion, and the literature on the subject has reached the dimensions of a family bible. It is difficult to advise without running the risk of being unfair, but the following is the result of a study of clinical effects and of many published reports on absorption and excretion on different compounds.

In the treatment of early syphilis rapidity of effect is usually achieved by the injection of an arseno-benzene compound. Each dose of this passes through the tissues, delivers its blow and is excreted in a very few days, leaving the spirochaetes to recover, especially the spirochaetes in the less accessible parts of the meninges. The role of the other metal employed is to maintain the attack in the intervals between the injections of "914" and for some time after these have temporarily been suspend-

ed. It has been shown that, to achieve the destruction of *Sp. pallida*, a certain minimum must be taken up and maintained in the tissues. Below this "metallic potential" the spirochaetes flourish, or are only restrained. A water-soluble preparation may be absorbed and excreted too quickly for this purpose, and some such as tartrates for this purpose, and citrates, cause considerable discomfort. A further consideration is that a quickly absorbed preparation can call on the kidneys to excrete more bismuth per diem than they can manage, and renal irritation may result, so that individual doses must be comparatively small, and, to maintain the required amount of bismuth in the tissues, injections must be given two or even three times a week. On the other hand, in choosing a preparation which is absorbed more slowly than the water soluble, one may go to the other extreme and fix on one which remains at the site of injection too long, perhaps becoming encysted there. I am strongly inclined to think that this may happen with the class of preparations in which bismuth is given in a state of fine sub-division. It is true that, on injection, bismuth is precipitated from all compounds, except bismuth thiglycollate, but it must be taken up again more quickly in the case of some preparations than in that of others. For example, it is well known that the soluble form of the tartro-bismuthate of potassium and sodium after precipitation at the site of injection is more quickly absorbed than in any insoluble compound (though this may have been suspended in a watery medium) and it seems likely that, in general, bismuth is taken up again by the tissues more quickly and regularly from a compound than from the metal itself.

The insoluble compounds suspended in a watery medium are more evenly and regularly absorbed than are those in an oily suspension, and the absorption of the oxychloride is satisfactory. At the same time the absorption of the salicylate and of the sub-salicylate suspended in oil is not so irregular as to constitute a danger of too great an accumulation at the site of injection.

Using either of these preparations, a sufficiently large dose can be injected once a week to maintain a constant supply of the metal in the tissue without calling on the kidneys to excrete more per diem than is good for them. The oxychloride suspended in a watery medium, and, perhaps, the salicylate in an oily one, seem therefore to meet the requirements of tolerability, of medium rate and regularity of absorption, and of convenience in average cases of early syphilis under treatment also with effective doses of an arsenobenzene compound.

In early cases where, for any reason, arsenobenzene treatment cannot be exploited to the full, one would turn more and more to the soluble preparations, of which there are available some that are soluble in water and others that are soluble in oil. Of the water-soluble I would avoid the tartrates and citrates because they cause too much discomfort. Some workers have found the oil-soluble preparations eminently satisfactory both in experimental and clinical work, and careful analyses of urines of patients to whom different compounds of bismuth had been administered showed that the absorption of this type of compound is far more even than is that of any insoluble one. It is necessary to repeat that, if a soluble preparation is chosen, it should be injected at least twice each week.

A question of considerable importance is whether, in early cases, bismuth or mercury should be given concurrently with (*i.e.*, in the same course as) the arsenobenzene compound. I am convinced that, in early cases, one or other of these metals should always be given in at least the first course for the following reasons:—

(1) In the early days of salvarsan-therapy when salvarsan was given alone syphilitic neuro-recurrences became very frequent and in my experience, they have occurred in by far the majority of cases in patients treated only with arsenobenzene compounds. It is often argued that the neuro-recurrences in the early days were due to the fact that the patients had received only one or two doses of salvarsan. This, however, is not completely true. I have seen cases of neuro-recurrence which have received only one or two doses of salvarsan. Further, it is well known that in pre-salvarsan days, by far the majority of patients received at most only a few weeks' mercurial treatment, but that clinically manifest neuro-recurrences were comparatively rare. There seems to be sufficient reason for this in the fact that salvarsan abruptly ends the interaction between skin and parasite, and so the development of a protective immunity, but may fail to destroy the spirochaetes in the central nervous system.

(2) Analysis of the cerebro-spinal fluid of cases after different forms of treatment shows a far higher proportion with pathological fluid in those treated on the alternating plan than in those on the concurrent plan; thus the fluid was found to be pathological in 74 out of 85 cases treated by arsenobenzene alone, and in 14 out of 34 treated by alternat-

ing courses of arsenobenzene and mercury, but in only 3 out of 42 treated with arsenobenzene and mercury administered concurrently.

(3) Numerous workers have expressed the view that neurosyphilis has increased since the introduction of salvarsan treatment. Others have expressed a contrary view, and in Great Britain a careful inquiry a few years ago showed no evidence of an increase. I believe that the difference in the evidence on this question lies in the exclusive use or not of arsenobenzene in the first course.

In my own clinic in over ten years, during which I estimate that over 3,000 early cases of syphilis have been treated on the concurrent plan, the number of clinically manifest neuro-recurrences has been one.

In contrast with this, Moore and Kemp's analysis of 402 cases of early syphilis (out of 2,500 treated on the alternating plan) revealed no less than 59 relapses of this kind, though their treatment was with the more effective "606" and 21 had received more than one course of injections with mercury in the interval.

Apart from the fact that the concurrent method of treatment is less likely to result in neuro-syphilis, there is some evidence to show that the presence in the circulation of another metal enhances the effect of an arsenobenzene compound. Thus it has been found that the trypanocidal effect of sulfarsenol was greater when any of a variety of other metals was in the circulation at the same time than when it was given alone, and later this was confirmed in a comparison of the trypanocidal and spirillicidal effects of zincsulfarsenol with those of sulfarsenol and "914" respectively.

If my views are right, those who are now treating their early cases on the plan of alternating courses of arsenobenzene with courses of mercury or bismuth are laying up for their patients a heritage of neuro-syphilis.

In early cases of syphilis which have not become completely sero-negative by the end of the first course, make of the injected remedies those derivatives "the arsenoxide" and the proteo-bismuth combination (Levaditi's bismoxyl) which are essential to the destruction of the parasite. A careful search of the patient may discover an indifferent metabolism requiring correction. At any rate, a change of compounds

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Extracts

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as also perhaps a change from the intravenous to the deep subcutaneous or intramuscular route, is indicated.

A brief reference only can be made to the treatment of syphilis in its later stages. The case of the latent syphilitic with irreversible serum reactions is one on the treatment of which opinions are greatly divided. My own view is that such cases are harbourers of *Sp. pallida*, and must be kept under treatment, as an insurance. If the cerebro-spinal fluid is positive, adjuvant pyrogenic treatment by malaria, intravenous injections of anti-typhoid vaccine, intramuscular injections of sulfosin, or similar means is indicated. In cases of cardiovascular syphilis some workers would withhold arsenobenzene treatment as unsafe. I find that small doses of one of the sulpharsenobenzene compounds, given as a deep subcutaneous injection twice or even three times a week, in conjunction with bismuth have afforded excellent results. In late cases of syphilis of the liver, I would rely only on bismuth and iodides, as the arsenobenzene compounds are liver poisons.

Editorial.

Retrenchment in the Medical Services.

The air has been full of rumours for some time, and occasionally from the dailies, we gather that proposals are nearing fruition for a great deal of retrenchment in many of the Departments. Such proposals have also included the Medical Department, and it is understood that they may affect the total number in the cadre of the different services. We realise that in a condition of national emergency, even some of the very good things may have to be sacrificed. It will all depend upon how far it is necessary to sacrifice necessities, even when a financial crisis as the one we are faced with, is confronted. The financial crisis is common to practically all countries and though financial experts are at a loss to know what exactly are the causes that have suddenly led to this great financial instability, there seems to be no doubt that there is need for economising in all possible directions. We are sure that the members of our Service will whole-heartedly co-operate with the authorities in whatever scheme of retrenchment it is possible for them to adopt within their limited spheres of activity. We are also sure that those lines of retrenchment will be such as will not minimise the care of the patients entrusted to their charge.

On questions such as this, there can be no difference of opinion, but we yet venture to hope that in the retrenchment that may be effected, it will not be necessary to very seriously disturb the existing state of affairs which is likely to lead to a great deal of difficulty in readjustment. We hope that the interests of the existing members of the Service will not be seriously jeopardised, and we hope the many young members of the Service, some of them brilliant

products of the University, who have been recently recruited through open competitive examinations, after a strenuous test—first in the selection of House Surgeons, then later in the competitive examination—will not be confronted with the possibility of their services even temporarily being curtailed. We are sure that the authorities concerned are fully alive to the difficulties that these young members of the Service will be faced with, should such a contingency be foreshadowed, and we have reason to believe that their case will meet with a sympathetic response from higher quarters.

We shall end by making an appeal to the members of our Services to co-operate in all possible manner to retrench in the non-essential items of expenditure in regard to hospitals, schools and colleges, and to do all they can to make the task of the authorities easier; and may we also hope that it would thus be unnecessary to send away any of the young enthusiastic members of our Service, even temporarily, who have been doing such useful work in their respective posts.

Medical News

Medical News.

We heartily congratulate Drs. P. Kutumbiah, R. Viswanathan, and S. T. Achar on their success in the recent M. D. Examination of the University of Madras.

Drs. Thambiah, Mannadi Nair, A. R. Parasuram, David, Abdul Basir, Govindan Nair, M. B. Prabhu and R. V. Rajam returned from Europe after taking higher qualifications in different subjects. It is a matter for gratification to the Madras Medical Service that many of its members have an equipment as good as that of some of the profession here and abroad, to shoulder responsibilities which were hitherto denied to them.

Dr. B. T. Krishnan, Acting Professor of Physiology, Madras Medical College, another member of our association, has been awarded the M.Sc. Degree of the Madras University for his thesis on "A study of the Intestinal Musculature in cats". The Medical profession in India, and Madras especially, has been accused of not contributing to the advance of Medical science. Dr. Krishnan has therefore met the accusation and set an example for other members of the service to follow.

Rao Sahib Dr. T. Sundara Reddy, F.R.C.S.I., Professor of Anatomy, Madras Medical College, retired from service in June last, after a meritorious career in the department. Dr. Reddy was an officer who rose by sheer merit. He commenced service in 1899 as a sub-assistant surgeon and was promoted to the rank of a Civil Assistant Surgeon in 1908. He was assistant to the Professor of Anatomy till 1921. When Dr. G. Rama Rao retired in 1921 he was appointed to succeed him as Professor which appointment he held with great credit.

To the students he was known as a strict disciplinarian and a very painstaking teacher. To his subordinates he was no less strict but he commanded respect and a high regard from all with whom he came into contact. Although he had not participated in many public functions and was rather reserved with the other members of the service he was well known to be very courteous and polite to every one. In his retirement the Service loses one of its most capable and experienced members and the college, one of its most able and painstaking teachers.

The District Medical Officers met at a conference at Madras to discuss administrative and other matters. One of the most important items in the agenda was the extension of the scheme of Honorary Medical Officers in the Presidency. A number of clinical and social meetings were held in honour of the delegates. The Madras Medical Association invited all the District Medical Officers who were members of the Madras Medical Service, at a dinner on the 23rd July at the Cosmopolitan Club, Madras. Nearly seventy persons took part of whom 20 were guests. Dr. Lakshmanaswami Mudaliar, the President of the Association in a welcome speech, proposed the toast of the guests. Drs. V. P. Kamath, Venkatarama Iyer, and B. Iswariah responded on behalf of the guests.

This gathering contributed a good deal to promote familiarity amongst the members of the service and served as a medium for rapid exchange of thoughts and ideals.

For the first time in the history of the University of Madras the Convocation Address to the Graduates of this year was delivered by a member of the fair sex, in the person of Miss McDougall, the Principal of the Women's Christian College. Madras has taken the lead in the matter of equality of the sexes. It was in this province that the Women's Franchise was first brought into force.

In her address, Miss McDougall paid a high tribute to the Medical Profession.

She said "the Doctor has with justice been called the fine flower of our modern civilisation. He has rightly come to be regarded as the most trustworthy of beings.....Before you all gleams and burns the guiding light, the glowing hope that by brilliant conjecture and patient toil of experiment, you may light upon the secret magic which shall meet and overthrow some hideous enemy of man--leprosy, cancer, cholera, or even check the onslaught of mental disease and disorder". No apter words can express the ideals of the medical profession. There is no paucity of clinical material in India, nor is there a lack of intellect and ability. With a suitable application of intellect and a proper grasp of the opportunities, the medical profession in India ought to contribute a large share to the advancement of Medical Science.

Current Medical Literature.

Medicine.

HAEMOLYTIC ICTERUS.

The May and June numbers of the *B. M. J.* contain the Hume lectures on Hæmolytic Icterus by Lord Dawson of Penn. Hæmolytic Icterus, the lecturer observes, has an interest beyond itself in that its features bring us into contact with the problems of the origin and destiny of blood and bile and so with the functions of marrow, liver and spleen. After briefly recalling our present knowledge of jaundice—especially the extra-hepatic formation of bile pigment and the part played by the reticulo endothelial system in this connection—he goes on to discuss the problem of hyperbilirubinæmia, as jaundice is an outward and visible sign of excess of bilirubin in the blood. He points out the merits of the two methods for the detection and measurement of bilirubinæmia—the Van den Bergh tests and the spectrophotometer—the latter he considers to be the more delicate, while the former is the more easily applied method. He divides jaundice into “Retention jaundice and Regurgitation jaundice” following the suggestion of Rich.

He then goes on to an analysis of his 40 cases of acholuric jaundice. The jaundice is never deep and in some cases it may be absent. It will ebb and flow though the disease persists. In some families jaundice and anæmia seem to affect different members of the family. The jaundice and anæmia show no correlation in intensity and appear to be variants of the same hæmolytic process. The absence of bilirubin from the urine in these cases is difficult to explain and is perhaps due to its fixation to blood plasma which prevents the kidney cells from excreting it.

Some patients develop symptoms due to gall bladder or biliary ducts and in some gall-colic may be the first event in the clinical history. This is due to the increased production of bilirubin from the blood in Hæmolytic Icterus, surcharging the liver with bilirubin and predisposing its throwing it down.

The spleen is palpable and often considerably enlarged—the enlargement is liable to vary. The measure of the enlargement is not neces-

Current Medical Literature

sarily related to the severity of the case. Jaundice and anæmia disappear on the removal of the spleen thus proving the dominant part played by the spleen in this disease.

The anæmia is of the secondary type except in severe cases. The gravity of the anæmia is to be measured by the amount of marrow effort required to maintain the number of red cells.

Microcytosis is a feature of this disease. Reticulocytes are more numerous than in any other condition. 5 to 15 per cent. is a common reading.

The lecturer lays stress on certain facts with regard to fragility of the R. B. C. which are likely to be overlooked. (1) Fragility of the blood cells varies not only in different subjects but also in the same subject (2) Its extent is not an indication of the severity of the clinical condition. Though increased fragility is a normal finding, it is not a necessary feature of the disease. It is a factor, not an essential feature (3) The fragility is a variable feature and there is no parallelism between its increase and the severity of the jaundice or the anæmia or the splenomegaly. (4) The increased fragility seems to be associated with the microcytosis.

The lecturer then discusses the treatment. The results of splenectomy has been strikingly good. Jaundice disappears quickly. R. B. C. count commonly approaches the normal. The recovery is rapid and permanent. Preliminary transfusion of blood should not be entertained lightly, certainly not without a pilot dose, as otherwise severe jaundice may ensue. The justification for not doing splenectomy lies in the mildness of the anæmia with low count of reticulocytes, low Van den Bergh indirect reaction after several investigations under varying conditions. Absence or slighness of jaundice is no justification. In some cases after splenectomy the recovery of the R. B. C. count is incomplete due probably (1) to the bone marrow function failing to regain its full powers or (2) the removal of the spleen is insufficient and that hæmolysis is excessive in other parts of the body.

The lecturer finally discusses the pathology of this condition and lays particular stress on the bone marrow. They are rich, dark red marrows with an absence of fat. They are erythrolastic more than leucoblastic and normoblasts are more numerous than megaloblasts.

Mitotic figures show a varying prominence in these. Formation of extramedullary marrow occurs in some cases.

In acholuric jaundice, for a time, the hæmolysis is met with successfully by increased R. B. C. formation. Later hæmolysis holds greater sway. The capacity for blood formation declines and the blood picture approximates more to that of pernicious anæmia. The difference between the marrows in the two conditions is that the marrow in pernicious anæmia is megaloblastic during the relapses and normoblastic during the remissions and in acholuric jaundice it remains normoblastic throughout, though the number of megaloblasts is increased. In both alike the presence of an active hyperplastic marrow is not evidence that blood formation is winning. It represents striving but is not a measure of successful achievement. There is a cellular hyperplasia without functional efficiency.

The lecturer considers that the more closely hæmolytic icterus is studied, the more does doubt grow as to whether in a strict sense an acquired form of the condition exists.

P. K.

A. R. PUPILS.

In the May number of the *B. M. J.* Dr. Adie has a note on a benign symptomless disorder characterised by pupils which react on accommodation but not to light and by absent tendon reflexes. He describes six cases of this condition and considers them not very rare. He comments that these cases are generally thought to be suffering from syphilis of the nervous system congenital or acquired. The correct diagnosis can be made with certainty by closely observing the contraction of the pupil during the act of accommodation for near objects. The true A. R. pupil reacts promptly and fully, often excessively, on convergence, and dilates again as soon as the effort to converge the visual axis is relaxed. In the cases cited the pupils show the so called myotonic reaction; they do not respond to light; they contract very slowly through a wide range during a sustained effort to converge, often remain small long after the effort ends; when they dilate again, do so slowly.

P. K.

ESSENTIAL HYPERTENSION.

The archives of internal medicine for May contains three articles on the subject of essential Hypertension which are worth studying. The

first article on the nature of the symptoms associated with essential hypertension contains a discussion on the character and etiology of the early symptoms of this condition. The early symptoms are headache, dizziness, weakness, fatigability, irritability, nervousness, etc. Previous conceptions of the etiology of the early symptoms are discussed and are disposed of as inadequate and a new view formulated instead.

The early symptoms associated with essential hypertension closely resemble those of the psychoneuroses and could be differentiated from them neither by their incidence nor by their general and individual characteristics. In both groups of patients no abnormality on physical or laboratory examinations could be found adequate to explain the symptoms. In both groups of patients a significant degree of maladjustment to emotional difficulties are found to explain the development of symptoms at the time they appeared. That the early symptoms associated with essential hypertension are due, not to organic changes but to the emotional maladaptation of the patient, receives support from the results of treatment. If these symptoms are psychoneurotic, they should respond to the three forms of therapy usually effective for the symptoms of psychoneurotic patients, viz (1) Removal of environmental difficulties or adjustment to them, (2) Sedatives and (3) Suggestion. This has been found to hold true for the writer's patients. The writer concludes that the early symptoms associated with essential hypertension are probably psychic in origin but the fundamental mechanism is not clear. Constitutional influences, endocrine products and possibly other factors may contribute to lessen the hypertensive patient's psychic and physical capacity for withstanding the stress and strain of life.

P. K.

II

In a second article W. Raab discusses the role of central vasomotor irritability in the production of essential hypertension. The writer takes the hypothesis logically well enough founded, namely, that shortage of oxygen and the presence of lactic acid in the vasomotor centres produce an irritation of the centres and finds experimental proof that not only these factors produce an irritation but also an increased irritability which is an important characteristic of essential hypertension.

The experiments were carried out on decerebrate cats with the vagi cut and he finds the experimental results correspond to the following

characteristic features of essential hypertension. (1) High blood pressure; (2) Hypersensitivity to the inhalation of carbon dioxide (abnormal increase of blood pressure) and to hyperventilation (abnormal fall of blood pressure), (3) Hypersensitivity to peripheral stimuli and (4) Weakened or inverted effect of epinephrine.

He concludes that the symptoms of essential hypertension can be considered to be due to the local need of oxygen and the accumulation of lactic acid within the vasomotor centres of the brain stem as a consequence of local circulatory disturbances (spasms, sclerosis.) The actual level of the blood pressure in hypertension would accordingly be the sum of the stimulus through lactic acid plus the pathologically increased responses to the stimulus of the normal CO_2 tension of the blood and of different kinds of sensitive and emotional stimuli.

P. K.

III

The third article discusses carbohydrate metabolism in hypertension. It seems to be fairly definitely established that in hypertension whether or not complications such as nephritis exist there is disturbance in the metabolism of carbohydrates. This may manifest itself as hyperglycemia and glycosuria. The more constant feature, however, is the exhibition of a high blood sugar curve on the administration of an adequate amount of dextrose. The two theories advanced to explain the disturbance in carbohydrate metabolism are (1) the existence of sclerosis of the blood vessels of the pancreas leading to a diminution in the secretion of insulin and (2) the presence of a hyperadrenalemia. In diabetes mellitus the respiratory quotient curve is lower than normal after the ingestion of dextrose; in hyperadrenalemia the curve is normal. This fact is utilised by the writers to distinguish diabetic from non-diabetic cases.

The writers conclude from the study of their cases that all patients with hypertension have high blood sugar curves. The respiratory quotient curves were normal in 9 of the 10 cases studied. This is adequate proof that there is no diminution in the secretion of insulin in hypertension. The theory that hyperadrenalemia is the cause of the disturbance cannot be proved in the present state of our knowledge. The mechanism concerned in producing this disturbance in carbohydrate metabolism in hypertension is unknown.

P. K.

Therapeutics.

TREATMENT OF CHOLERA BY BACTERIOPHAGE.

Asheshov, Saranjam Khan and Lahiri, in the April 1931 issue of the *Indian Medical Gazette* give an account of the treatment of Asiatic cholera by Bacteriophage. Their observations are based on work done in the cholera ward of the Patna Medical College Hospital in 1929. Before they took charge of the ward the mortality of cases bacteriologically proved to be cholera was 25%. After they took charge, out of 140 cases proved bacteriologically to be cholera, there were only 4 deaths giving a mortality of 2.8%.

The principles which they applied in the treatment were (1) Treatment must be begun at the earliest opportunity without any delay. (2) Bacteriophage treatment cannot be employed alone; other things such as intravenous alkaline saline are necessary. (3) No antiseptics like Calomel, Pot. Permanganas, essential oils or Kaolin etc., are to be used as, in the presence of these substances, bacteriophage does not act. It can be used (1) orally (2) by intravenous route.

By the mouth.—Bacteriophage is used in fluid drachm doses every 30 minutes, undiluted, for the first 24 hours and at longer intervals for the next 48 hours; about 100 c.c. is used up in 72 hours which is usually enough.

By the intravenous route.—Only 5 c.c. is given, well diluted with the alkaline hypertonic saline solution. The specific gravity of the blood and the temperature of the saline given are to be specially noted.

They conclude that with the above treatment, recovery is quicker, and period of convalescence is shortened. Bacteriophage acts on the cholera vibrios. As it has a definite bacteriotactic action, it goes to the intestinal canal in a very short time after administration by the intravenous or subcutaneous route.

The authors, however do not hold that the bacteriophage they have used, will be effective for all the strains of cholera in India, but they are hopeful of preparing one that will meet all needs.

M. N. P.

PARATHYROID EXTRACT—COLLIP IN ECLAMPSIA AND ALLIED CONDITIONS.

R. E. Lopez, (Surgery, Gynecology and Obstetrics) reports on the value of parathyroid extracts in Eclampsia and Eclamptic Toxaemia.

The principle is based on the idea that in pregnancy there is a deficiency in the function of the parathyroid glands, although this deficiency may or may not be made apparent by the amount of calcium in the blood. This is the explanation for the fact that the blood calcium figures in some cases of Eclampsia are normal.

He uses a standard extract of parathyroid, one unit representing "one hundredth of the amount of extract which will produce an average increase of 5 mgms. in the blood serum calcium of normal dogs of approximately 20 kilograms weight, over a period of 15 hours" (Collip). The usual dose he employs is about 20 units, repeated daily or on alternate days if necessary.

He summarises his results on a few cases of eclampsia and eclamptic toxæmia. Diuresis is initiated, oedema disappears; the subjective symptoms, dizziness, headaches, muscular cramps etc., disappear.

In those cases which were accompanied by tetany, the convulsions ceased shortly after the first injection. In no case was labour started by the injections. The foetal heart suffered no change.

The blood calcium did *not* show an increase after the use of the parathyroid extract. Other additional measures were employed in the treatment, such as morphia etc.

M. N. P.

THE TREATMENT OF ANGINA PECTORIS AND INTERMITTENT CLAUDICATION.

(*Tiemann-Munchener Medizinische Wochenschrift*).

The author describes the use of "Eutonon" an extract from liver, in the treatment of Angina Pectoris and Intermittent Claudication. It was Zuelzer that first introduced Eutonon.

The effect of Eutonon was often better than that of the nitrites though every case did not respond. Sometimes the effect was latent for more than a week although in some cases, distinct improvement resulted immediately after the first injection of Eutonon. Eutonon has succeeded when nitrites and hydrotherapy have failed.

Eutonon is usually given intravenously although intramuscular injections are also efficacious. It has an action on the coronary arteries as well as on the peripheral arterioles. The treatment with Eutonon sometimes increased the sensitiveness to digitalis, wherefore it may be used as a supplementary medication in cases in which digitalis and

strophanthin. alone do not suffice. The maximum daily dose was 10 c. c. It has also been given orally in 30 minim doses per day.

International Medical Digest.

M. N. P.

ARSENIC AS A THERAPEUTIC AGENT IN CHRONIC MYELOGENOUS LEUKAEMIA.

C. E. FORKNER AND T. F. M. SCOTT.

(*Journal of the American Medical Association*).

Authors' summary and conclusions:—

1. Ten cases of chronic myelogenous leukaemia have been treated with the administration by mouth, of solution of potassium arsenite (Fowler's solution). Nine cases showed striking improvement. One case, in the terminal stage of the disease, showed no improvement.
2. The total numbers of W. B. C. have been reduced from several hundred thousand per c. mm, to numbers approximating normal.
3. The immature cells have markedly decreased both absolutely and relatively and in some cases have disappeared from the blood.
4. The anaemia has in all cases been arrested, and in several cases the R. B. Cs. and haemoglobin values have returned to approximately normal.
5. Simultaneous with the fall in the number of the leucocytes there has occurred in most of the cases, a relative increase in the numbers of the monocytes and basophilic granulocytes and an increase in the number of nucleated R. B. Cs.
6. Blood platelets have remained in normal or moderately increased numbers throughout the treatment even in the leucopenic phases.
7. The size of the spleen and of the liver has been reduced in each case, and in two instances to such a pronounced degree that these organs were no longer palpable.
8. Biopsy of the bone marrow suggested a return to a red marrow.
9. The basal metabolic rate has been reduced to values approximating the normal.
10. The patients have in most instances gained weight and have felt better than they had for many months.
11. When solution of Pot. Arsenite was omitted, the spleen and the liver again become palpable and the leucocyte count rose within a

few weeks, but the improvement could be maintained, at least for a few months, by the regular administration of small doses of the drug.

12. These uncompleted observations suggest that solution of Pot. Arsenite is of definite value in the palliative treatment of chronic myelogenous leukaemia and perhaps can be used in conjunction with roentgen therapy for the best known results.

Obstetrics.

THE BERCOVITZ TEST IN PREGNANCY.

A year ago Z. Bercovitz described a pupillary test for pregnancy, the instillation into the eye of one drop of 10% solution of Sodium Citrate mixed with 5 drops of the patient's blood. A positive reaction consisted in a dilatation or contraction of the pupil compared with that of the other side.

This test was tried on 110 consecutive cases; though a few cases of pregnancy gave negative results, no patient who was not pregnant, gave a positive reaction. In the opinion of the investigators the Bercovitz test is a valuable aid to the diagnosis of pregnancy, being much simpler and quicker than the Zondek-Aschheim test. (*The Lancet*).

M. N. P.

Pathology.

THE SIGNIFICANCE OF RETICULOCYTES IN MALARIA.

(*Sarkisian: Trop. Medi. and Veterin. Moscow.*)

Reticular and granular erythrocytes present in large numbers (up to 40 per cent) in the blood of the foetus, are very scanty in normal blood (1.6 per cent). In certain pathological conditions the proportion of these elements is considerably increased, owing to the activity of the bone marrow. The author has compared the blood of normal and malarial subjects using vital staining methods (Brillant Kresylblau and this stain combined with Giemsa's mixture). It was found that in malarial cases of all the three varieties and in mixed infections, the number of reticulo granular red cells was increased from 12 to 99 per cent. The proportion of these elements present appears to be of diagnostic value in cases where parasites are absent from the blood. During treatment the number of reticulocytes at first rises owing to increased regenerative activity on the part of the bone marrow, and then gradually falls.

C. A. Hoare in "*The Tropical Diseases Bulletin*."

M. N. P.

Association Notes.

An Executive Committee meeting of the Association was held on Sunday 3rd May 1931.

An Executive Committee meeting of the Association was held on Saturday 27th June 1931.

An emergent meeting of the Association was held on Saturday 1st July 1931.

An Executive Committee meeting of the Association was held on Monday 6th July 1931.

In these last three meetings the question of submitting a memorandum regarding the extension of honorary system was discussed and a draft memorandum was considered and submitted.

An ordinary meeting of the Association was held on Saturday 18th July 1931 when Dr. K. C. Paul, M.D., delivered a lecture on "Some points on the diagnosis and treatment of Diabetes".

The city members of the Association entertained the members of the Provincial service who attended the District Medical Officers Conference at a dinner on Thursday the 23rd July 1931 in the Cosmopolitan Club.

Correspondence.

FROM

M. R. RY. P. K. WARRIER AVL., L. M. & S.,

PERSONAL ASSISTANT TO THE SURGEON-GENERAL,

WITH THE GOVERNMENT OF MADRAS,

Madras.

TO

THE PRESIDENT,

MADRAS MEDICAL ASSOCIATION,

Madras.

R. No. 1605-E, dated 6th August 1931.

SIR,

Reference :—Your letter dated 1st June 1931 regarding the revision of pay to certain Civil Assistant Surgeons of this Department.

After a careful examination of the cases of the Medical Officers referred to by you, it has been decided that it is not possible to give retrospective effect to the conditions laid down in G.O. 1029 P. H., dated 9th October 1929, and that no useful purpose will be served by addressing Government in the matter.

I have the honour to be,

Sir,

Your most obedient servant,

(Sd.) P. K. WARRIER,

Personal Assistant to the Surgeon-General
with the Government of Madras.

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The above special issue of the Antiseptic will be the third of the series that has been decided to bring out from time to time. The last two of them, viz., Silver Jubilee Issue (April 1929, Price Rs. 2) and Eye, Ear, Nose and Throat number (October 1930, Price Rs. 2), have been much appreciated and the forthcoming one will maintain the high level of its predecessors, several prominent Radiologists having promised articles of much interests to the specialists and the general practitioners alike. Subscribers to the Antiseptic will get the copy of the special issue without extra charge in due course. To non-subscribers the price of the special issue will be Rs. 2 a copy, and orders could be registered now. So if you are not already a subscriber to the Antiseptic please remit your subscription to-day to the undersigned and get the special issue free. Subscription to the Antiseptic may begin from any period. The 28th Vol. of the Journal has begun with the January 1931 issue. A few back copies of 1931 and the last two special issues are available. Annual inland subscription to the Antiseptic is Rs. 5, post paid, and Foreign 10 sh.

Full particulars of the last two special issues and a specimen copy of an ordinary issue of the Antiseptic will be sent free on application.

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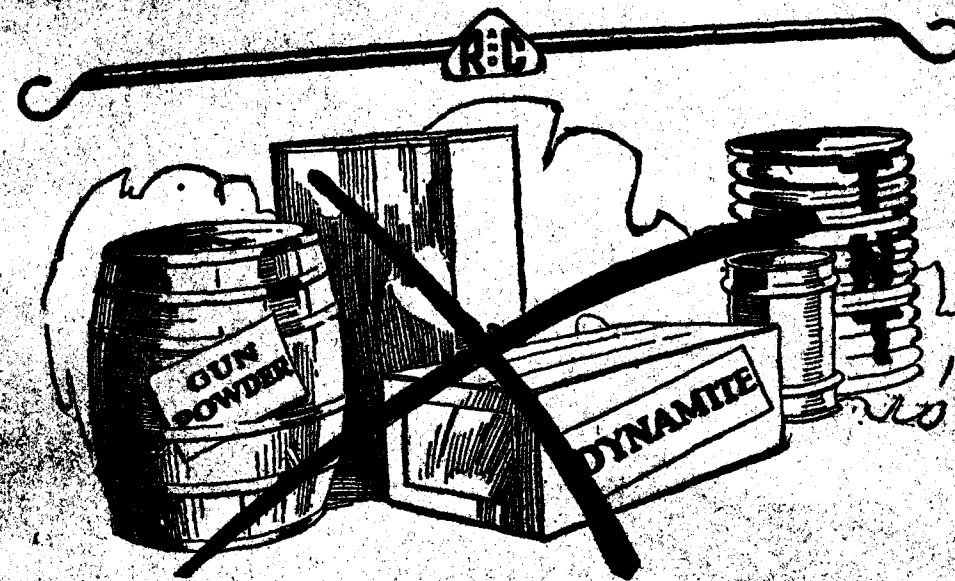
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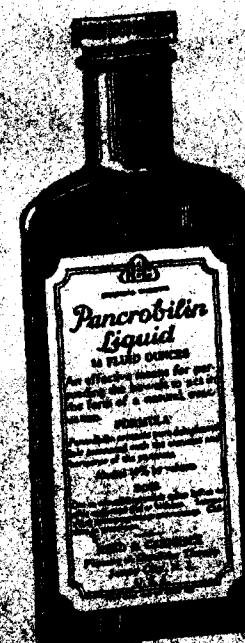
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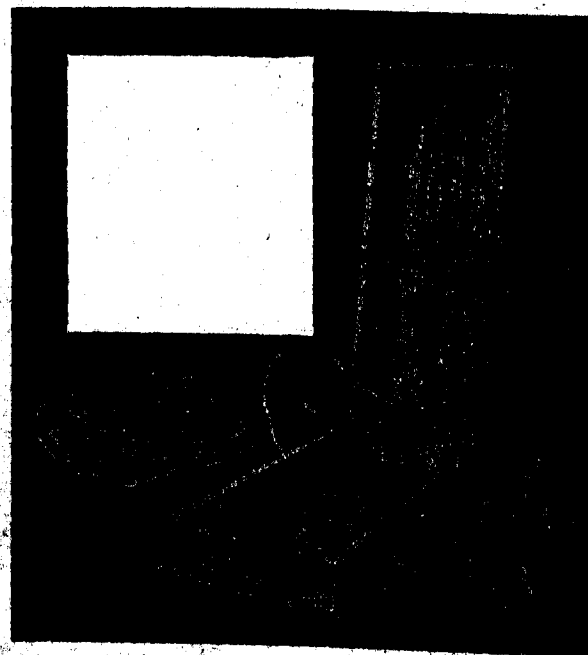


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