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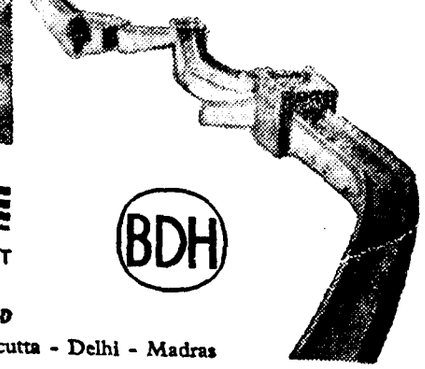

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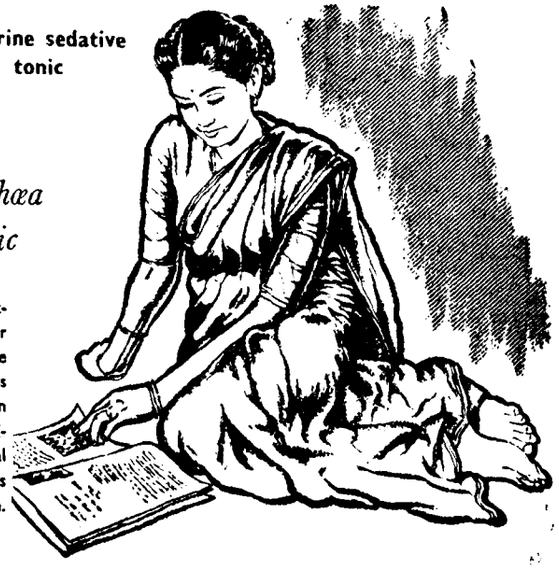

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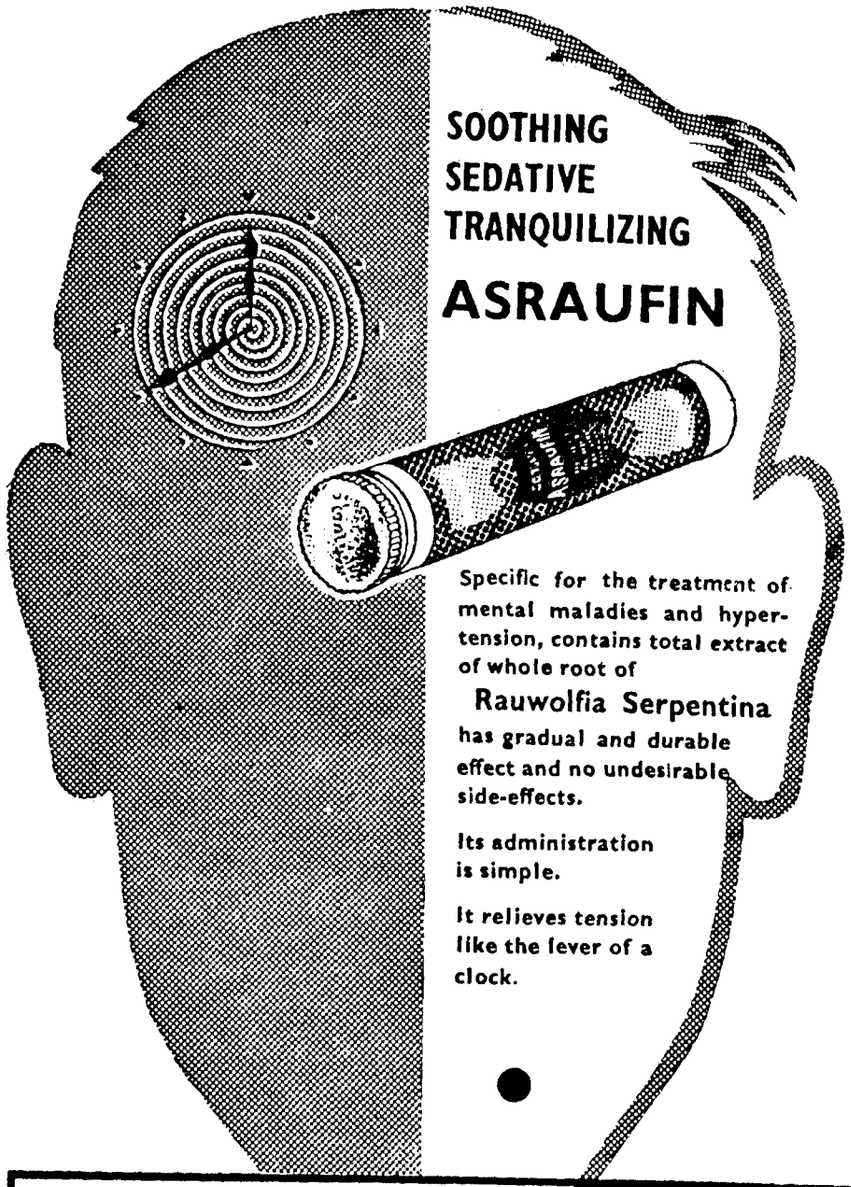

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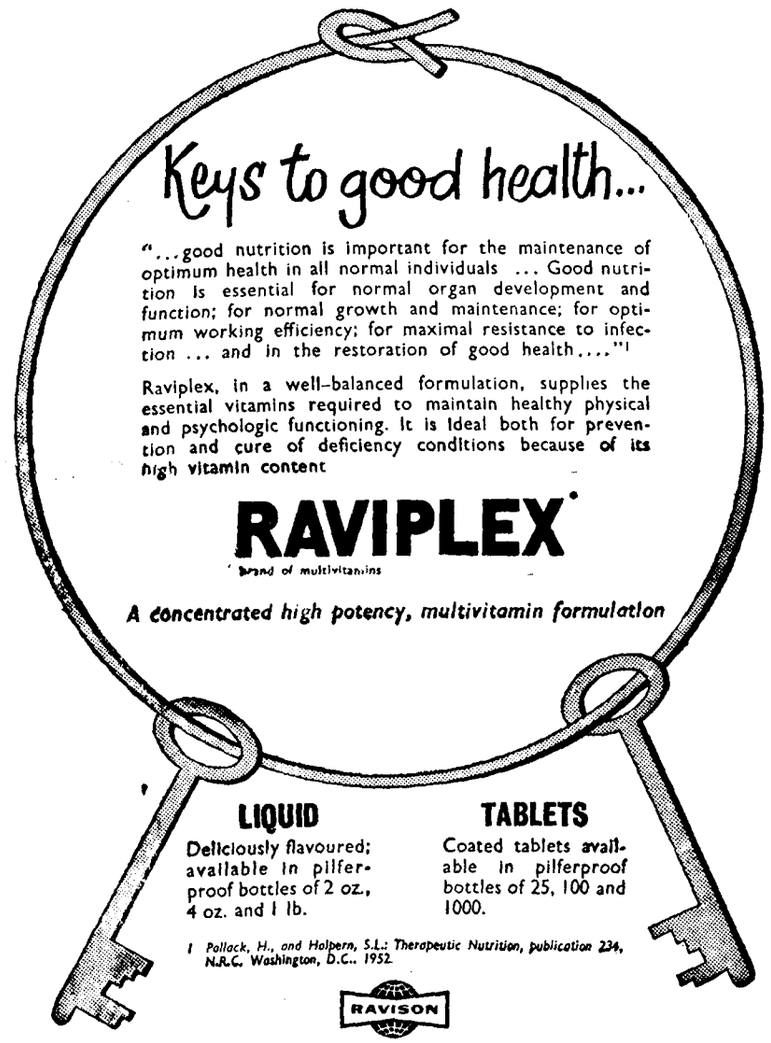

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Original Articles

INFECTIVE HEPATITIS*

K. G. DAS, M.D. (Madras),
Department of Medicine, Kasturba Medical College, Mangalore

Acute infective hepatitis or Acute infectious hepatitis as some Americans would call it, has been in existence for a long time as catarrhal jaundice. During the II world war, its prominence was recognized when it occurred as an epidemic in the army. The Public Health department became increasingly interested in the disease because it was recognized that the disease could occur as often as not in a non-icteric form and since the non-icteric form goes unrecognized, the reservoir of infection remains invulnerable and the spread of the disease occurs from person to person without any hindrance. Because of the increasing incidence in children and because of a large number existing in non-icteric form, the disease also poses a pædiatric problem.

Aetiology.—There are two viruses : (1) Virus A or I.H. (Infective hepatitis virus) and (2) Virus B or S.H. (Serum homologous hepatitis virus).

Virus A causes acute infective hepatitis—in epidemics or in sporadic cases. It is usually transmitted to others by the pharyngeal or alimentary route. It has a short incubation period (10 to 40 days).

Virus B causes homologous serum hepatitis which occurs usually sporadically with no fever and is transmitted only by parenteral administration of human blood or its products. The two diseases cannot be distinguished pathologically. There is

*Based on Clinical Observations made on over 150 cases of Infective Hepatitis during the recent epidemic that occurred in South Kanara District. Specially contributed to the ANTISEPTIC.

no cross immunity between these two. The common term for both is "Viral hepatitis."

The study of hepatitis is handicapped because of the impossibility of transmitting the active agent to laboratory animals.

Mode of transmission.—(1) *Intestinal oral* circuit is the commonest route. During the recent epidemic, we observed that the disease was essentially among that population which consumed fish. It was practically not seen among vegetarians. Very likely the virus must have been transmitted by the oral route *i.e.*, by the consumption of fish.

(2) Direct contact and droplet infection from nasopharyngeal and respiratory tract is another likely mode of transmission of the disease.

(3) It may be suggested that the virus may also be excreted through the kidneys. This is based on the observation that in some cases albuminuria and renal failure occur during the pre-icteric period. This may be due to the passage of the virus through the kidneys.

Water-borne and food-borne epidemics are very common. Flies may take an active part in the transmission of the virus. Boiling the water for 5 minutes usually destroys the virus but the ordinary chlorination of water, or the addition of potassium permanganate to water does not destroy the virus.

In most of the cases, the virus in the stools and nasopharynx markedly diminishes after icterus appears but in some cases, it may remain for months in the stool or even throughout the life-span of the individual, *i.e.*, the carrier state.

Pathology.—We could not do liver biopsy in all cases of infective hepatitis as a routine procedure. We had to satisfy ourselves with biopsies only in some of the cases. In most of the cases, the biopsy specimen showed centrilobular necrosis, periportal infiltration of mononuclears with intact lobular reticular net-work. Such of those cases which showed a long time for recovery or which were very acute in nature or which occurred in most of the pregnant women in the present epidemic, showed a disrupted reticular pattern of liver lobule with proliferation of bile canaliculi and bile thrombi. It is very unusual to get fatty changes in the liver. The parenchymal cells may show hyaline inclusion bodies. Cases which recover but where liver biopsy had shown loss of reticular frame-work of the lobule, usually develop later cirrhosis of the liver or hepatic insufficiency. Kidneys often show cholæmic nephrosis. The heart may show subendocardial or myocardial hæmorrhages.

Clinical feature.—The disease affects any age-group. It is rare in persons over 50 years of age and in infants below six months of age.

Stages of the disease.—1. "*Prodromal stage*" is usually characterized by malaise, fatigue, body-pain, and discomfort over the upper abdomen. In a good number of cases, anorexia is an early symptom. It may be followed or preceded by nausea and vomiting. In some cases, symptoms are referrable to the gastro-intestinal tract and we found in the recent epidemic at least 30 per cent showed evidences of gastro-enteritis. In other cases, the symptoms may be suggestive of an upper respiratory tract infection. The disease is usually accompanied by fever which may vary from 100°F to 105°F. The liver is enlarged and tender. In about 30% of cases splenic enlargement and lymph nodes belonging to the posterior cervical chain are enlarged. These glands have contact with deep lymph channels draining the dome of the liver. In children, the commonest symptoms during this stage are restlessness, headache, backache, cough, diarrhœa, vomiting and abdominal pain. Children below 2 years seldom develop jaundice. About 30% of cases in children above 2 years do not develop jaundice.

2. *Icteric stage*:—This is usually characterized by fever and chill. Before the colouration of the conjunctiva, the patient usually notices a deep brown colour of the urine and at the same time decreasing colour of the stools. The patient usually feels better with the onset of jaundice. It is very usual to find patients walking about with deep jaundice secondary to acute infective hepatitis without even having noted jaundice. Hepatic pain of varying intensity is common. In some cases, it may be so severe as to resemble biliary colic or even acute abdomen. Pressure over the right lower chest usually brings about pain which is commonly called "*The positive punch test.*"

Pruritus is very uncommon in spite of deep icterus in infective hepatitis. If pruritus lasts for more than five days, probably we have to revise the diagnosis. The icteric stage may be absent completely. This usually occurs in 20% of adults and in the vast majority of children under two years of age. Jaundice usually lasts for about 2 to 3 weeks. In mild cases, it may last for only a few days whereas in severe cases, it may last for 6 weeks or even more. Brädycardia is common mainly during the icteric stage. Bleeding tendencies will be noted commonly in very severe cases and quite often in such cases vitamin K will not be able to relieve the bleeding tendency. We noted ascites in a few cases, most of them among pregnant women in whom the disease had taken a very virulent form and the majority of these succumbed to the disease. Ascites was almost never seen in mild cases. A slight amount of pitting œdema over the ankles was quite common in moderately severe cases but marked œdema was present only in very severe cases. This is due to water retention secondary to the inability of liver to inactivate œstrogens and antidiuretic hormones of the posterior pituitary.

Convalescent stage.—During this stage, symptoms rapidly disappear. Appetite returns to normal; in some it may be very ravenous. Jaundice begins to fade. In some cases, nausea and vomiting continues. This usually signifies a very stormy convalescence or may forebode a fatal termination. In most of our cases, jaundice subsided by 6 weeks, in others after over 2 months. Icterus lasting for over 2 months usually suggests development of subacute or chronic hepatitis. In some cases, jaundice may persist for over 8 weeks, without any other symptoms and it may gradually fade.

Pre-terminal stage.—This stage is usually characterized by intractable nausea and vomiting. Usually there is bleeding from the gastro-intestinal tract. Vomitus and fæces contain blood. Skin ecchymoses and petechiae appear. Bleeding may occur from various body orifices. Nervous symptoms develop. The earliest change is in the personality of the patient. An obedient co-operating patient may become disobedient, critical and may become restless. Insomnia becomes prominent. There may be alternating drowsiness and insomnia. Certain motor changes, set in fairly early. The common ones are: muscular twitchings, tremors, choreiform movements, flapping movements of the hands, muscular spasms, neck rigidity, pyramidal signs etc. Yawning and persistent hiccough may occur. Pupillary reactions are sluggish to light at first; later the pupils become dilated and non-reacting to light. Finally the patient passes on to the stage of coma. This stage may be preceded by delirium and maniacal outbursts. All the nervous manifestations are of serious importance but coma is the gravest.

Foetor hepaticus.—Very characteristic smell. It is not foul smell but at the same time it is not an agreeable smell. Perhaps, we may use the term "sweetish disagreeable smell." This smell occurs mostly in severe cases of hepatic damage. We could get this smell in almost all cases of hepatitis, among pregnant women where the disease is particularly virulent. Most of them died but a few survived inspite of the foetor hepaticus. This smell is presumably of intestinal origin. It is a precoma sign and a useful one for diagnosis, especially in cases first seen in coma suggesting the hepatic origin of the condition. It is useful in assessing the prognosis also—since the intensity and persistence of this smell gives a useful clue regarding prognosis. When the smell is mild and transient, prognosis need not be poor but when the odour is very strong the prognosis is extremely poor.

Prognosis.—Usually the mortality in infective hepatitis is low. When the disease occurs in patients over 45 years of age, it is not very good. The disease usually takes a severe form in pregnant women and if the disease is acquired during the first trimester of pregnancy, it may affect the off-spring. It usually brings about rapidly acute yellow atrophy of the liver. In the recent epidemic, the disease took a very mild course among children, males and women; but was very virulent among pregnant women.

The following may be considered to be good prognostic features:—
(1) Early reappearance of urobilinogen in the urine at the height of jaundice after it had become negative in the urine earlier.

(2) Reappearance of yellow coloration of the stool.

(3) Return of appetite.

(4) Feeling of well-being.

(5) Disappearance of tenderness over the liver region.

(6) Reduction in the size of the liver with corresponding improvement in the clinical picture.

Sequelae of viral hepatitis.—(*a*) Over 95% recover without any sequelæ with just bed-rest alone; (*b*) less than 0·5% develop acute or subacute yellow atrophy. In the present epidemic, over 50% of pregnant women developed yellow atrophy and succumbed to the disease; (*c*) some develop chronic sequelæ—the common ones being: (*i*) Cholangiolitic cirrhosis which resembles biliary cirrhosis, (*ii*) post-necrotic cirrhosis, which usually occurs in patients who have recovered from a severe attack and in whom the liver biopsies have shown loss of lobular architecture, (*iii*) chronic hepatitis—in this group the patients do not recover completely. They continue to have palpable liver, which is tender. Icteric tinge continues. They usually complain of easy fatiguability, anorexia and mild dyspepsia for fatty foods. Most of them recover with proper treatment. Some of them develop exacerbation of the condition and die of hepatic failure and others may develop cirrhosis later. (*iv*) Some patients recover completely from the disease—liver not enlarged, liver function tests normal but the patient complains of fatiguability, flatulence, headache, and anorexia. This is usually psychic in nature and they respond well to reassurance.

Chief Laboratory features in infective hepatitis.—1. *Urobilinogen*:—This is increased during the pre-icteric stage and is decreased or absent during the height of the icteric stage; it reappears in the urine as recovery sets in and becomes normal when recovery is complete.

2. *Bilirubinuria*:—Bile pigments appear inthe urine even before the appearance of jaundice and the patient may complain that he is passing high coloured urine even before an icteric tinge appears on the sclera. Bilirubin disappears also early from the urine even though it remains high in the blood and the patient shows deep jaundice. This shows that the urinary threshold is low; in the later stages it is high and that explains why it disappears during the early stages.

3. *Faeces*:—Will be light-coloured at the height of jaundice but rarely as pale as in extra-hepatic biliary obstructio. It usually lasts for 3 to 4 days. Reappearance of pigment in stool denotes impending recovery and is an excellent prognostic sign.

4. *Blood examination will reveal*:—(*a*) Marked increase in bilirubin, (*b*) Vanden Bergh test may be biphasic or direct immediate positive. In some overwhelming fulminant cases, death occurs before jaundice develops, (*c*) serum albumin is lowered, globulin is usually raised, (*d*) thymol turbidity, cholesterol flocculation tests etc. will be positive showing parenchymatous damage to the liver, (*e*) the leucocyte count will be of value–in the pre-icteric stage, there is leucopænia, lymphopænia and neutropænia. The count comes to normal in the icteric stage. If there is marked leucocytosis during the icteric stage, it usually suggests a secondary infection or acute yellow atrophy, (*f*) in severe cases the prothrombin time is prolonged and is not affected by the administration of Vitamin K. (*g*) ESR is raised during the pre-icteric phase and it falls as jaundice develops. As jaundice abates BSR (*sic*) rises again and falls to normal with complete recovery.

Relapses occasionally occur. The patient apparently has recovered from the disease but again develops jaundice, fever, loss of appetite etc. The liver once again becomes markedly enlarged and tender. In most of the cases, it is usually due to early resumption of hard work, intake of alcohol, excessive intake of food during convalescence when patients usually have a ravenous appetite. Quite often, they may be mild but some of them end fatally or pass on to the stage of chronic hepatitis.

Prophylactic measures.–1. Improved sanitary conditions, so that contamination of water and food are prevented. Anti-fly measures must be adopted. Since the virus usually gains entrance into human fæcal contamination of food or water which occurs through flies or sewage, the proper handling of excreta and improved sanitation and anti-fly measures may help in preventing the spread of the disease. The virus is particularly resistant to ordinary methods of water sterilization. Boiling the water for not less than five minutes is a definite safeguard. Needles and syringes should be well sterilized to ensure the destruction of viruses.

2. *Gamma globulin*:—It is a very useful prophylactic agent but unfortunately not available in sufficient quatities. We were fortunate to get a good amount of gamma globulin through the State Government. The dosage used was very much smaller than that used in poliomyelitis (⅛th). Since the drug was not available in sufficient quantities and since the disease took a very virulent form among pregnant women, we tried the drug mainly on pregnant women. The drug was given intramuscularly in doses of 1·0 cc. to 1·5 cc. In most of the cases, it

prevented the attack; some developed the disease in spite of the injection but they responded very well to the usual line of treatment. When the injection was given after the jaundice had set in, the course was not modified by the gamma globulin.

TREATMENT:—1. *Bed-rest*:—Importance of complete bed-rest in the treatment of acute viral hepatitis can never be over-emphasized. It forms one of the simplest but most important therapeutic agents in the treatment of viral hepatitis. Some people ignore this aspect, but they may have to repent for the same—immediately or years later. At least one month's bed-rest must be given. Physical exertion definitely aggravates hepatic damage—hence bed-rest must be started during the pre-icteric stage. During the convalescent stage, severe exertion must be avoided—lest the patient may pass on to a relapse. Return to activity should be gradual. Improper bed-rest may bring about acute yellow atrophy, chronic hepatitis, relapses or years later post-hepatic cirrhosis of the liver. It should be continued until the patient is free from all symptoms: liver no longer tender, no bilirubin in the urine and serum bilirubin less than 1 mg%. If during convalescence any of the symptoms recur, immediately the patient must be put on bed-rest again.

2. *Diet*:—Must consist of fluids. It should contain adequate proteins, carbohydrates and vitamins: 300 to 400 grammes of carbohydrates, 150 grammes of proteins are recommended. Even though there is no need for total avoidance of fat, most of the patients do not like to take fat during the period of illness. In general practice, during the acute stage one has to rely mostly on milk, milk products, fruit juice etc. Carbohydrate in a most easily digestible form is advised, *i.e.*, glucose. I recommend to my patients 2 ounces of glucose every four hours in barley water or in syrup form with lemon juice. A bottle of glucose syrup may be kept by the side of the patient so that he could take it frequently. If there is nausea or vomiting 10% glucose and 5% protein hydrolysate are given by intravenous drip. The total amount of fluid administered per day is about 3 litres. A fluid intake and output chart must be maintained. Milk and glucose can be given through the intragastric tube. Alcohol must be avoided at all costs. It causes relapses and should be avoided for atleast six months after an acute attack.

3. *Use of lipotropic factors*:—Methionine and choline are very commonly and extensively used in the treatment of liver disorders and these agents have been used extensively in cases of infective hepatitis. There is no fatty metamorphosis in infective hepatitis hence on the basis of pathology, there is no place for these agents. These drugs are of value, if there are associated nutritional disturbances. Oral administration of these agents may bring about cholæmia. If it is decided to give these agents,

it is better to give them parenterally. Personally, I have tried both intramuscular and intravenous administrations of methionine and choline. Most of the patients have shown very little benefit by the administration of these agents during the acute stage. I have found the drugs useful during convalescence stages especially in those cases where the liver remains markedly enlarged and tender and the patients are having a poor appetite. In these cases, an early return of appetite and a sense of well-being are noted after the administration of these agents.

4. *Liver extract*:—The administration of liver extract is very useful. I have tried both purified liver extract and the crude variety intravenously, diluted with glucose. When purified liver extract was used, the first dose of 2 cc. was given intramuscularly just to find out whether the patient was sensitive or not; subsequently, if the patient did not react badly to the intramuscular administration, 3·5 cc. of the agent was given intravenously daily. When crude liver extract was used, the first dose of 2 cc. was given intramuscularly. If there was no reaction, the drug was subsequently given intravenously–starting with ½ cc. diluted with 25 cc. of glucose. If the injections were not attended by any reaction (the commonest being rigors, fever, body pain, headache, ache over the loins) each time the drug was increased by ½ cc. up to a maximum of three cc. per injection. The larger doses were usually associated with reactions. Since the intravenous administration of crude liver extract is more often associated with reactions, it should not be given to very ill patients. (I tried mostly the whole liver extract manufactured by the T.C.F., and there were no reactions). The results after administration of crude and refined liver extracts were equally good but the advantage of administering the crude liver extract is that it is very cheap compared to the finer liver extract preparations. It is worth mentioning here that the administration of either purified or crude liver extract intramuscularly is not of much use in the treatment of infective hepatitis.

5. *Vitamin B-complex*:—Should be administered as acute deficiency of these vitamins may exist because the patient's nutrition may suffer during the acute stage. This may be given orally, by the intramuscular route or intravenous route.

6. *Vitamin C*:—Some physicians use large amounts of vitamin C in infective hepatitis. This is not only unnecessary but in some cases, it may also actually enhance the damage to the liver tissues and may later on bring about fibrosis.

7. *Vitamin E (Alpha tocopherol)*:—Has exerted anti-neurogenic effect in nutritional liver injuries. On the basis of experimental studies, I tried large doses of vitamin E (500 mg. per day) in some cases. The drug seems to exert a beneficial

effect on the course of the disease and is worth trying along with other agents especially in severe cases.

8. *Antibiotics*:—Tetracycline (Achromycin) and chlor-tetracycline (Aureomycin) are very useful agents in severe cases. These antibiotics should not be used routinely because the indiscriminate use of these agents may bring about fatty infiltration of the liver and hepatic damage. In very ill patients, it is advisable to use these agents intravenously 250 mg. twice a day till the condition improves. In other patients, the drug can be given orally 250 mg. every 6 hours.

9. *A.C.T.H. and adreno-cortico steroids*:—A.C.T.H., prednisone or prednisolone are not recommended for routine treatment of acute infective hepatitis. Improper dosage may result in abatement of symptoms temporarily and relapses are notably high in this group. I have used them with great advantage in very severe cases and desperately ill patients. They are of great value in cases which do not show improvement after six weeks or which show a tendency to go in for chronic hepatitis. The recommended dosage for prednisolone or prednisone is 5 mg. every four hours on the first day, 5 mg. every 6 hours on the second day and 5 mg. three times a day for 6 days; the dosage is then tailed off in another 3 days. If the patient cannot swallow or has some vomiting—100 mg. of cortisone can be given intramuscularly as the first dose and later 50 mg. every 6 hours. The dosage can be gradually reduced and stopped in about 9 days.

10. *Indigenous drugs*:—I have used the following indigenous drugs in the treatment of infective hepatitis.

(*a*) A plant which is locally called as Nela Nelli (Kanarese) or Keela Nelli (Malayalam). An extract of the leaves and tender shoots is made in glycerine and is given in milk or as such in one ounce doses twice a day. This brings about diuresis, a feeling of well-being, return of the appetite and disappearance of bilirubinuria early in some cases but how quickly the liver functions return to normal is not well-established.

(*b*) *Liv. 52*:—This tablet has the same effect as the extract of the above plant.

Treatment of hepatic coma:—This is a serious condition and one is tempted to overdo the treatment. The aim of treatment should be: (*a*) to allow the liver to have as minimum an amount of metabolic work as possible, (*b*) to maintain the fluid balance, and (*c*) to maintain the caloric requirements of the body.

Diet:—At first the proteins must be stopped completely. Glucose is given in quantities sufficient to provide an energy source comparable to that provided by the healthy liver. This works out to about 300 to 350 grammes per 24 hours. This amount is given as a 10% glucose solution by the continuous

intravenous drip or through intragastric tube (about 3 litres are needed daily). To each litre of fluid, 0·5 g. of sodium chloride and 1 g. of potassium chloride are added. Care is taken not to over-load the system with fluids and that œdema of the lungs does not occur.

Vitamin K :—Is administered in 10 mg. doses intramuscularly. Synthetic vitamin K can be given intravenously. In the presence of severe liver damage, this may not necessarily restore prothrombin to normal.

Antibiotics :—(*a*) Penicillin is given routinely to combat broncho-pneumonia.

(*b*) Chlortetracycline (aureomycin) or Tetracycline (achromycin) 250 mg. every 3 hours may be useful. This temporarily sterilizes the gut and the depth of coma may be lessened. 250 mg. of tetracycline as intravenous drip every 6 hours is very useful.

Blood transfusion :—If the patient has a marked bleeding tendency or has lost a good amount of blood and is anæmic, 300 cc. of blood is given after careful grouping and cross matching.

Adrenal cortico-steroids :—Very useful in some cases of hepatic coma, cortisone 10 mg. intramuscularly stratum and later, 50 mg. every four hours; equally effective is hydrocortisone 25 mg. intravenously every 4 hours. When the patient's condition improves, the patient may be put on oral prednisone or prednisolone 5 mg. every 4 hours on the first 2 days, later 5 mg. thrice a day for a week and later on the dosage is tailed off.

A combination of cortisone derivatives and broad spectrum antibiotics has given excellent results in some cases.

The use of 25% glucose 200 to 300 cc., vitamin B_1 100 mg., nicotinic acid 300 mg., vitamin C 500 mg., vitamin K 10 mg., Riboflavin 10 mg., Tetracycline 300 mg., as intravenous drip is very helpful in some cases of hepatic coma. The patient recovers from coma temporarily but may pass off into coma again ; hence the fluid has to be given every twelve hours.

Glutamic acid :—20 to 40 grammes orally daily or as glutamate in transfusion fluids is very useful in some cases of hepatic coma.

Sedatives :—For irritability or the excitement present in some cases the best sedative is paraldehyde 7 to 10 cc. intramuscularly. Morphia and barbiturates should be avoided. 25% solution of Mag. sulph. four ounces can be given per rectum as retention enema. If restlessness continues, 5 to 10 cc. of 25% Mag. sulph can be given intramuscularly.

Acknowledgement.—I am very thankful to Dr. A. Thimmappayya, M.B., B.S., District Medical Officer, South Kanara, Mangalore for having provided me with all the facilities to study the cases at mofussil stations and for permitting me to publish this article.

BRIEF NOTES ON TUBERCULOUS DISEASE OF THE SKIN *

J. S. NARAYAN, F.D.S. (London),
Medical Officer-in-charge, Government Subsidiary Leprosy Centre, Tirupati (Chittoor Dist.)

THE human body is very susceptible to tuberculous infection :- Bones, joints, glands, viscera, mucous bembranes and even the skin may be affected. The more common tuberculous diseases of the skin will be dealt with in this article.

Tuberculous diseases of the skin may be classified as under :-

I. Localized forms.—(1) Lupus vulgaris ; (2) lupus verrucosus ; (3) scrofuloderma ; and (4) tuberculosis ulcerosa.

II. Haematogenous forms.—(1) Tuberculosis miliaris ; (2) tuberculosis lichenoides (lichen scrofulosorum) ; (3) tuberculosis papulo-necrotica (*a*) acnites and (*b*) follicles ; (4) lupus miliaris, (disseminated) ; (5) tuberculosis indurativa, (Bazin's disease) ; and (6) sarcoids.

I. Histopathology of localized forms.—Histopathology of cutaneous tuberculosis differs from that of T.B. lesions elsewhere, in that, this form of tuberculosis rarely undergoes caseation, fibrosis and calcification. The cutaneous tubercle may not be regular in the arrangement of cellular elements like tuberculosis in other organs. It may be in the case of skin manifestations, composed of epitheloid cells, though giant cells, and lymphocytes are usually present, whereas in other forms, tubercles consist of lymphocytes in some and granulation tissue in others.

The epitheloid or connective tissue cell derives its name from its similarity to the cells of the epithelium. It is usually seen as an irregularly shaped broad cell with homogeneous cytoplasm and a large oval nucleus containing chromatin granules.

Giant cells if present are always suggestive of tuberculous infection. They have many nuclei arranged in a ring at the periphery of a well-marked cytoplasm. T.B. can be demonstrated within giant cells on rare occasions. The epitheloid and giant cells are usually surrounded by lymphocytes and the edge of the lymphocytic infiltration ; plasma cells may be found arranged along the blood vessels.

1. *Lupus vulgaris* :—This is the commonest type of cutaneous tuberculosis characterized by the presence of apple jelly nodules showing a tendency to heal in one area and progress in another. The apple jelly nodules are small, translucent and embedded deeply and diffusely in the infiltrated cutis, and found in plaques by coalescence and by the development of new

*Specially contributed to the ANTISEPTIC.

lesions. The patches are usually in a level with the rest of the skin. On healing, deforming scars are often produced. The disease usually begins in childhood, and is found mostly on the exposed parts. This disease may arise primarily in the skin either by direct inoculation or through the blood stream; or it most commonly starts in the mucous membrane and reaches the skin through the lymphatics. Four-fifths of all cases affect the face and half of the nose. Seventy-five per cent of the cases show involvement of the nasal mucous membrane which is important in prognosis and treatment.

The disease is essentially a lymphatic one spreading along the plexus of deep fascia and showing secondary efflorescence of the surface. It is thus always more extensive than what appears on the surface. It spreads slowly taking months or years to cover large areas. The characteristic appearances are: one or more bright-red raised scaly patches with more or less *ulcerating* destruction of tissues and scarring. In a dioscopy (applying pressure to the lesions of the skin with a glass) the typical apple-jelly nodules become apparent. Scars are seldom found while nodules can always be seen. Ulceration and tissue destruction depend mainly on some secondary pyogenic infection. There may be considerable crusting which may have to be removed before a diagnosis can be made. In longstanding cases squamous epithelioma may develop and this particularly occurs if X-rays are used in treatment. At times in any type there may be diffuse œdema, hypertrophy or associated lymphadenitis or lymphangitis. The face, the nose and lobes of the ears are often involved resulting in shrinking and scarring. The tip of the nose may be sharply pointed and beak-like or the whole nose may be destroyed and only the orifices and the posterior septum may be visible. The upper lip which is one of the sites of predilection becomes swollen and thickened with fissures, crusts, ulcers or granulation on the mucous aspects. On the trunk and extremities patches of the disease may be of a serpiginous or gyrate pattern; it may cause mutilation in the hands, feet and genitals. When the mucous membranes are attacked, the patches rapidly become papulomatous and ulceration due to moisture and contamination by other micro-organisms lead to the appearance of circumscribed greyish macerated and granulating patches; or irregular deep painful fissures on the tongue sometimes causing swelling and making nutrition, difficult.

Types of lupus vulgaris.—(1) *Atrophic type* which gives the appearance of a depressed or slightly elevated smooth patch, composed of white scar-tissue of apple-jelly nodules. (2) *Hypertrophic type*:—A warty vegetative growth, scabbed or crusted, sometimes exudative which generally occurs in most areas near the body orifices. (3) *Ulcerative type* may be associated with either of the above types or with scrofuloderma with underlying tuberculosis of the glands and bones. Clinically the ulceration tends to be ragged, dirty, deep, indolent with poor vascularity and occasionally with tenderness, pus-formation, vegetation and crusting.

Aetiology.—The organism responsible is usually of the human type, sometimes bovine. The patients are generally children or young adults, but no age is exempt; there is a distinct group of elderly cases. There is often a history of exposure in the home, commonly with co-existing gland tuberculosis. The exanthemata, measles predispose to the disease and the multiple disseminated type results.

Differential diagnosis:—The following diseases have to be differentiated as to their structure, infection, history etc. Lupus erythematosis, tertiary syphilis, mycosis fungoides, lupus sycosis, basal epithelioma, leprosy, acne rosacea, psoriasis and rodent ulcers.

Treatment:—In the early cases, wide and deep surgical treatment is best; while in advanced cases, surgical diathermy may be used. Potassium permanganate, acid nitrate of mercury followed by U.V.R., curette, or caustics for external use are the methods of choice. (Kramayer lamp has great penetrating power). Nutritional therapy can be tried, salt-free diet, high vitamins with proteins and low carbohydrate and fat diet. Theoretically this will dehydrate the skin.

2. *Lupus verrucosus*:–The warty vegetative form is the main type of cutaneous tuberculosis. The lesions are dull red or purple showing hyperkeratosis. They remain harmless *in situ* for years showing a little development of serious complications, *e.g.*, generalised T.B. gangrene and erysipelas. This form of tuberculosis cutis may be one of auto-inoculation. A phthisical patient may infect his own wound with tuberculosis or it may be acquired or a child infects an abrasion with dust. In this type of tuberculosis, a small miliary abscess frequently develops at the apex of a warty excrescence. Rupture discharges pus and a cicatrix forms leaving a small depressed scar. The common sites are the dorsum of fingers and hands, the ankles and buttocks. The soles and feet are important in India. The lesions occur as discoid circumscribed warty patches of the size of a coin or even of the palm; it may be configurated. The lesions may be single or multiple and resemble blastomycosis.

Differential diagnosis:—(1) Lichen verrucosus—intense itching on the front of legs but no depressed-scar is left. (2) Syphilis:—Active, rapidly spreading and other signs of syphilis.

Treatment:—Surgical diathermy under general anæsthesia, followed by U.V.R. and radium.

3. *Scrofuloderma* is a disease occurring directly as a result of T.B. lesions frequently in the cervical glands, also in the bones, and joints of children and tonsils. Clinically lesions are reddish, granulomatous, exudative and crusted, with small sinuses and ulcers of varying sizes with undermined edges. The process usually starts with a deep induration of the skin, overlying the diseased lymphatic glands, which for months previously have become matted together with a doughy consistency. The glands tend to break down and the resultant exudate stretches the skin and forms a fistula. Chronic discharging sinuses and oval or linear ulcerated irregular pale granulation forms crusts and a hypertrophic scar with cicatricial bands result. This combined condition is scrofuloderma.

Treatment :—Consists in the excision of the nodules and radium therapy.

4. *Tuberculosis ulcerosa* :—This type ulcerates from the very beginning and extends rapidly, with no tendency to spontaneous healing. Ulcers are oval, shallow, discrete and covered by crusts. Miliary tubercles will be seen on the adjacent mucous membranes. It occurs at the muco-cutaneous borders of the nose, mouth, anus and genitals and also the mucous membrane of the mouth, it occurs usually in young adults with severe tuberculosis of the larynx, lungs and this urinary tract. The patient must seek the aid of the physician.

II. Haematogenous forms.—It is important to know that this type also occurs and to recognize the type of lesions and the common sites of infection.

1. *Tuberculosis miliaris* :—Is a rare disease with acute generalized eruptions of indolent brownish red tubercles which undergo caseous degeneration forming ulcers ; it is seen in childhood but rarely in adults. In the stage of ulceration the ulcers are small with a circular, dull, red border and a pale base, covered with severe purulent exudate. Miliary tubercles are present at the edge and tubercle bacilli may be found in the lesions. When occurring in infants, this condition follows measles or scarlet fever. There is generalized miliary tuberculosis with other signs and symptoms of T.B.

2. *Tuberculosis lichenoids* :—This occurs usually in childhood, but is rare after 20 years of age ; it consists of a grouping of indolent minute keratotic papules, scattered over the trunk and extremities. Lesions are pin-head sized or even smaller with the colour of the normal skin or reddish brown, firm, flat-topped or surmounted by crusts or thin scales, the lesions are arranged in groups usually on the trunk, unchanged, giving rise to no symptoms. They may slowly undergo spontaneous evolution, but may sometimes recur. In children it is usually associated with T. B. of the bones etc.

Histopathology :—Definite tubercles occur below the epidermis usually in relation to the hair follicles or sweat glands and ducts.

Treatment :—Systemic T.B. sanatorium treatment is indicated.

3. *Tuberculosis papulo-necrotica* :—This is otherwise known as.—(*a*) Acne necrotica ; (*b*) papular and nodular tuberculoid ; (*c*) acnites ; (*d*) acne agminata ; (*e*) follicles ; and (*f*) rosacea-like tuberculoid of Lœwandowsky.

Darier describes this tuberculoids as a group of a dissimilar condition, supposed to be caused by *Bacillus embolic* from lesions in the viscera. Cutaneous reaction to their products varies gradually in degree, and allergy and according to the attenuation and quantity of the virulent material.

The lesions in T. B. necrotica are bilateral, symmetrical, small, indolent and granulomatous. Acnites and acne agminata are really papulous necrotic, tubercles occurring on the face. Follicles on the other hand occur on the hands, forearms, feet and ankles. In follicles the tubercles are situated deeply, the lesions are papulovesicular, and become later pustular and nodular. They are firm and painless. The lesions run a course for a few months, then reappear afresh lasting for years. Rosacea-like tuberculoids, have a tendency to appear on the cheeks, fore-head and chin, leaving the midface free and they rarely affect the nerves excessively. Lesions are minute, discrete papules of a bright red or brownish yellow colour ; they may be follicular. Varying degrees of erythema, telangiectiasis and pustulation are present. There are no special commodones and no large pustules. A high degree of sensitized tuberculin is present. Seborrhœic diathesis is absent and there is no extensive follicular condition or hypertrophy of the sebaceous glands.

Histopathology :—Papulo-necrotic tuberculoid is a T.B. manifestation with or without the formation of T.B. situated in the superficial parts of the corium and showing patches of necrosis.

4. *Lupus miliaris* (*Disseminated*) :—Appears as multiple minute, discrete, superficial, nodules with a tendency to group round the mouth and nares and to heal slowly leaving smooth crusts ; they are likely to appear in crops and within a few months, involute spontaneously. Bilateral symmetry suggests dissemination.

Histopathology :—Central caseation occurs in the nodules, besides changes seen in lupus vulgaris. The bacilli have been demonstrated in and below the giant cells.

5. *Tuberculosis indurativa* (*Bazin's disease*) :—This is a chronic benign form of tuberculosis cutis, causing soft nodules

above the subcutaneous vessels of the lower part of the leg which may progress into deep-seated, indurated ulcerations and scarring. This is usually symmetrical and most frequently occur in young women, who have glandular enlargement and acrocycosis (*sic.*). Developing lesions are slightly tender, erythematous, indurated, and gradually become deeply nodular. During winter the overlying skin becomes purple and the centre becomes soft giving rise to ulceration; the ulcers are irregular and excavated with undermined edges; neighbouring lesions often coalesce. Occasionally, there are white depressed scars from previous ulcers, which are the active lesions of evolution and involution numbering 2 or 3 even 12 or more. Cough is the common sign. Lesions may also occur on the sides or front of the lower legs or rarely on the thighs, trunk and upper limbs.

Histopathology:—There is cellular infiltration in the subcutaneous tissue-layer composed of large epitheloid cells, lymphocytes and plasma cells and occasionally multinucleated giant cells. Sometimes there is a lack of the typical structure of a tubercle and the characteristic change frequently observed, the so-called proliferation atrophy of adipose tissue.

Differential diagnosis:—This condition must be differentiated from:—(1) Erythema nodosum. (2) Secondary syphilis and (3) Iodide and bromide eruptions.

Treatment:—Consists in devising measures directed towards improving the patient's general health: Tonics, a balanced diet, rest and attention to septic foci. Injection of gold-preparations, U.V.R. and X-ray therapy are indicated. Recently intermittent venous occlusion or passive congestion has been tried. Modern treatment is lumbar ganglionectomy.

Kinnear, a medical officer who performs ganglionectomy, says that there are two factors responsible for Bazin's disease:—(1) Poor circulation and (2) T.B. toxins in the blood-stream. Ganglionectomy improves the circulation, enhances the blood-supply and deals with the T.B. lesions.

6. *Sarcoids or* (*sarcosis*):-This condition is possibly allied to T.B. cutis and may be a variant; but tubercle bacilli have not been demonstrated in any, except a few early cutaneous lesions.

Types of sarcoids.—(1) Sarcoids of Boeck. (2) Lupus pernio. (3) Benign miliary lupoid of Boeck. (4) Benign lymphogranulosis of Schanmann. (5) Osteotes tulurosa multiplex cystoides described by Jungling and (6) Sarcoid of Darier Roussy.

The skin lesion consists of nodular grouped superficial and subcutaneous, granulomatous infiltration which generally shows

more or less the same histopathology as that of tuberculosis. Sarcoids present different appearances *e.g.*, macular, papular, nodular or plaques. The lesions are firm, elastic, noted to extend further than what inspection shows; the corium is involved with little change in the epidermis, which may be thinned, telengiectatic or scaly. The lesions are involved in the centre and spread out and raised at the borders, with a slow growth and a long history.

The Wassermann test and biopsy are diagnostic.

Treatment:—Operative procedure is indicated if the condition is localized. X-ray therapy has been found useful in some cases, and some others have been cured with radium.

Lupus erythematosus should be regarded as a manifestations of a toxic process which may be streptococcal or tuberculous in origin. This disease is very much influenced by U.V.R. radiation and in a number of cases the onset of the condition is traceable to a well-remembered short exposure to U.V.R. or to indiscriminate sun-bathing. It is a chronic erythematous scarring disease of two main types.

(1) The discoid or localized and (2) the disseminated acute type.

(1) *The discoid or localized type*:-Affects principally the face and to a less extent the scalp and hands, occasionally seen on the mucosa of the lips, appearing as sharp well-defined, reddish patches covered with greyish, closely adherent scales (Mortar scaling); on removal of a scale, can be seen on the undersurface, small spicules, which fit into the depressions of the underlying skin; lesions heal in the centre leaving scars. The typical situation is, the bridge of the nose and centre of the cheek giving a butterfly-wing-appearance. The lobes and margins of the ears are also affected. The disease is symmetrical. There is generally some itching.

(2) *Disseminated type*:—This appears acutely on the face and upper part of the trunk, arms and hands and in severe cases is almost universal. Pyrexia and general malaise are present and the case may end fatally.

Aetiology:—Is unknown but streptococcal or tuberculous toxins are stated to cause the disease. In some cases of lupus erythematosus there is evidence to show that it may be a tuberculoid, but other cases furnish good evidence that toxins of other substances may produce it. The characteristic capillary circulation and exposure to sun's heat or to cold, play a part in the localization of the eruptions.

Clinical signs:—Erythema, telangiectasis, follicular rugging and atrophy.

HISTOPATHOLOGY :—(1) Thickening of the stratum corium; (2) downward prolongation of the same; (3) acanthosis; (4) flattening of papillæ; (5) dilatation of papillary blood vessels; (6) round-celled infiltration of dermis and (7) fragmentation and swelling of the collagen bundles.

The diagnostic test of H. W. Barber.—The patient is given two tablets of M & B 693 every 4 hours for 48 hours, the suspected patch is observed for the development of any reaction. If it occurs as indicated by an increased erythema, the condition is due to a streptococcal infection. Sulphanilamide therapy is continued with regular white-cell count during treatment. If agranulocytosis develops pentnucleotide is given.

DIFFERENTIAL DIAGNOSIS:-This has to be differentiated from: (1) Lupus vulgaris; (2) psoriasis; (3) sycosis barbæ; (4) papular syphilide; (5) acne rosacea; (6) tinea and (7) lupus pernio.

TREATMENT :—*General* :—Patient must be thoroughly examined to make sure his general physical condition is reasonably good. Bad teeth must be attended to. The general principle of treatment is to protect the lesions from the sun, which can be done by applying a lotion or liniment containing calamine, or 10% acid tannic.

SPECIFIC TREATMENT :—Intramuscular injections of bismuth 0·2 g. at weekly intervals until the patient has had twelve injections, the patient to have rest thereafter for 1 to 3 months according to the response. Nicotinic acid tablets should also be given.

IDIOPATHIC ULCERATIVE COLITIS

The diagnosis of idiopathic ulcerative colitis may be strongly suspected in any individual, regardless of age, who complains of intermittent or constant rectal bleeding often associated with diarrhœa and cramping lower abdominal pain. Suspicion is strengthened if there are systemic symptoms or signs such as fever, weight loss, anæmia, and so forth, or involvement of other systems as mentioned previously. Ultimately, confirmation of the diagnosis in the majority of cases ("left-sided" and "universal") rests on proctoscopic examinations and barium enema X-ray in approximately 20% of cases with exclusive right-sided involvement. The proctoscopic picture varies—from mild hyperæmia and friability, through marked engorgement with constant mucosal ooze of blood and purulent exudate, to advanced destruction of the mucosa with longitudinal ulcerations, bowel narrowing, profuse bleeding, and "pseudopolyposis." Often the rectum and rectosigmoid are definitely involved by the disease, but the barium enema X-ray examination is normal. With progressive advancement there appear mucosal "shabbiness," tubulation, rigidity, and shortening of the organ.—(Marvin H. Sleisenger, M.D. : Colitis : ulcerative and "spastic," *Antibiotic Medicine & Clinical Therapy*, January 1958, via *Current Medical Digest*, April 1958).

ON THE MYSTERIES OF ADRENAL AND HYPOPHYSIS

U. P. BASU, D.SC., F.N.I., F.I.C.,
Bengal Immunity Research Institute, Calcutta

THE structure of the human system has been studied from time immemorial, but the function of its different units is being understood only in recent times. For example, glands have been known to anatomists, but it is within comparatively few years that they have been recognized as organs which have the property of secreting chemical substances of great biological importance. The substances that are being secreted by the endocrine glands (organs of internal secretion) are known as hormones. A general knowledge of their molecular architecture is now known to us, some ideas about their metabolism we also possess, but we are yet to know the biochemical mechanism by which the various types of hormones produce their physiological effects as well as the mode of their formation in different or in the same glands.

Pituitary.—It is a puzzle that a gland (pituitary) weighing even less than one gramme and being situated in the centre of the head at the base of the brain controls the activity of the whole endocrine system. The gland is composed of two distinct parts known as anterior and posterior lobes. Both are the sources of a number of hormones which chemically are of a polypeptide nature but mostly differ in their physiological action. Recent observations on the nature of corticotrophic hormone (ACTH) formed in the anterior pituitary show that it is a polypeptide[1, 2] consisting of 39 amino acids linked together. But it stimulates the adrenal cortex to form quite different types of bodies known as steroids. These as well as similar groups of compounds formed in the testes of the male and in the ovaries of the female under stimulation from another type of hormone (gonadotrophic) of the anterior pituitary lobes, play an important role in human physiology. The question naturally arises how such complex bodies are being formed under the influence of a proteinous body?

The function of the peptides as found in posterior lobes is different. The active principles are found to exert an action on the uterine similar to what is being exerted again by a different type of compound ergometrine (I), (see *p. 813*) as available from ergot. They also are of a peptide nature[3, 4] formed by the combination of 8 amino acids as shown in Fig. I (see *p. 812*). The oxytocin principle has already been synthesized[5] for large-scale production.

Adrenals.—The adrenals or suprarenal glands situated on the upper surface of the kidneys also, consist of two parts—

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* Specially contributed to the ANTISEPTIC.

Fig. I

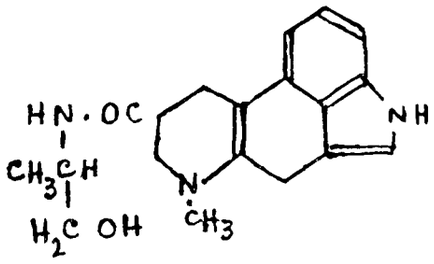
Tyrosine—Isoleucine
Cystine
|
Asparagine—Glutamine
Proline—Leucine—Glycinnamide
(Oxytocin)

Tyrosine—Lysine*
Cystine
|
Asparagine—Glutamine
Proline—Phenylalanine—Glycinnamide
(Vasopressin)

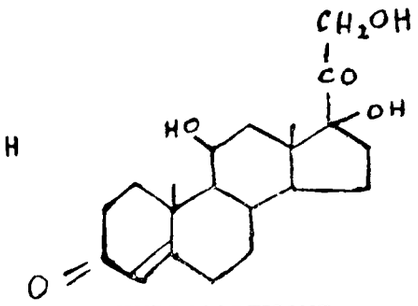
*Lysine when isolated from pig pituitary; but Arginine when from cattle.

the cortex (outer layer) and the medulla (inner layer). The former so essential to life, is now found to secrete a number of hormones. The more important product is hydrocortisone (II) secreted in greater amounts (varying usually from 20 to 40 mg. daily under normal conditions) than any other adrenocortical hormone-desoxycortone (III), corticosterone (IV), dehydrocorticosterone (V), or adrenosterone (VI). The more known products cortisone (VII), is not produced by the adrenal glands, but is probably formed from hydrocortisone (II) in small amounts. Cortisone is now easily available and often used in therapy. On ingestion it is converted to hydrocortisone which is the active hormone. Systematic investigations in the line, have, however, offered[6,7,8] more active products in prednisone (VIII) and prednisolone (IX). A 6-methyl derivative of prednisolone is being claimed[8a] to be more potent. The drawback in the use of all such steroids lies in the nitrogen loss through protein catabolism, and increased gastro-intestinal motility and secretion. Some newer derivatives have been made where in experimental studies further reduction of the above side effects is being noticed. These are 16-hydroxy-9-∝-fluoro prednisolone (Triameinolone of Lederle) and 21-fluoro-9-∝-fluoro prednisolone worked out by S.R. Squibb. Investigations on homologues of hydrocortisone may yet offer dividend as 2-methyl hydrocortisone is much more potent in both its glucocorticoid and mineralo corticoid activity than hydrocortisone.

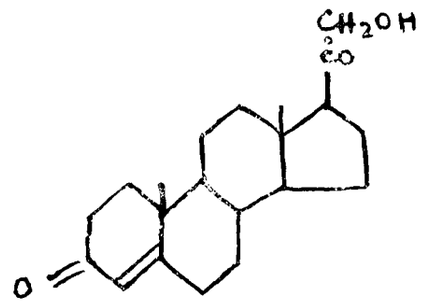
Again the medulla of adrenals is found to secrete two hormones of simpler but of different type in times of physical strain, and thereby, enables the body to perform some impossible tasks in emergency, Adrenaline (X), R=CH_3) which is released from the medulla during any stimulation of the central nervous system, produces many complex physiological effects in the body and has many therapeutic uses. Its most important action is in raising the blood pressure, but the exertion of all these characteristics, is dependent on many other factors.



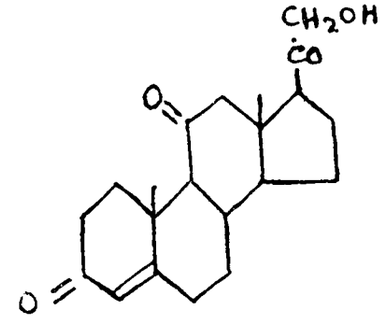
(I) ERGOMETRINE



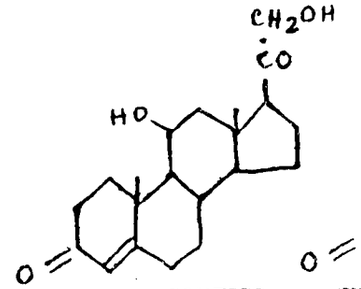
(II) HYDROCORTISONE



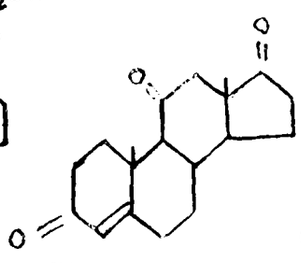
(III) DESOXYCORTONE



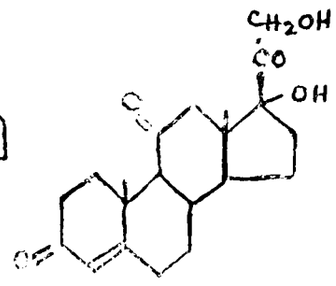
(IV) CORTICOSTERONE



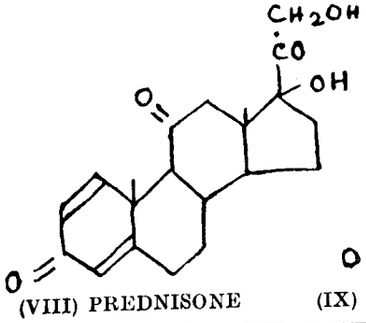
(V) DEHYDROCORTICOSTERONE



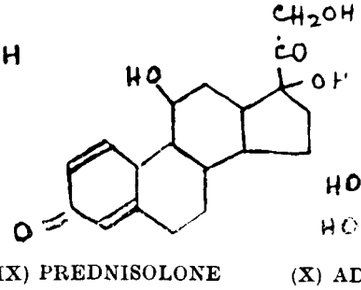
(VI) ADRENOSTERONE



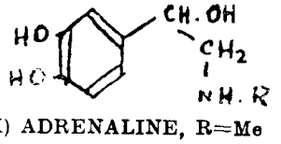
(VII) CORTISONE



(VIII) PREDNISONE



(IX) PREDNISOLONE



(X) ADRENALINE, R=Me

Characteristics of adrenaline.—Pure adrenaline undergoes various changes when left over in solution in the form of its common hydrochloride salt. One of the most common characteristic change is the formation of colored compound, adrenochrome. Apart from this change which can be controlled to a considerable extent, its change into its dextro-enantiomorph is difficult to retard. The common and natural drug is laevo-rotatory and is about 20 times as active as its dextro-isomer in pressor action; dl-variety possess half the activity of the laevo-form. The changes involved[9] are evident from the figures given in Table I.

TABLE I

Change in Adrenaline hydrochloride solution (1%) on storage

Period of storage in months	Specific rotation	Potency	
		Biological	Physico-chemical
0	−50°	100	100·00
2	−34°	90	100·00
6	−25°	70	99·55
8	−11·5°	60	100·00
12	−6·0	60	100·00

Subsequent observations made from different laboratories particularly from Burroughs Wellcome, have induced the British Pharmacopœia Commission to introduce adrenaline tartrate. But a better preparation will be found in adrenaline malate as combination with lævomalic acid helps in retarding the change of *L*-adrenaline to its other enantiomorphic form to a considerable extent[10].

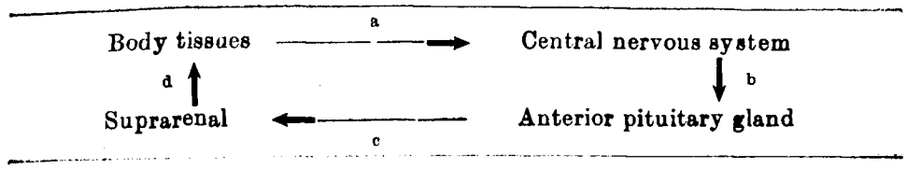
It is now known that the adrenal cortex is essential to life, but that the medulla may be removed without any serious effects. The hormone, however, has extensive uses in medicine, for example, in relaxation of the bronchial musculature, dilation of the pupil of the eye, inhibition of the movement in the uterus, intestines, and bladder. It also plays an important part in carbohydrate metabolism. A study of the chemical structure of adrenaline would indicate that it should be easily susceptible to undergo various chemical as well as bio-chemical changes (*cf.*, Basu[11]). In this respect its homologue, *nor*-adrenaline (X, R=H), may also undergo similar changes once the two hormones are secreted into blood and body tissues.

Clue to the formation of active principles.—The differences in the physiological function of cortex and medulla of adrenal or in that of the two lobes of the pituitary, as well as, the divergence in the nature and composition of the active principles of the above glands, are problems of utmost sequence to pharmacologists and chemists. The question arises how a similar type of physiological reaction is being exerted by different types of bodies, and/or, how one type of product as present in coritcotrophic hormone, stimulates the formulation of diverse nature of compound as is found in hydrocortisone of the cortex.

One interesting observation[12] that may be recorded here is the stimulation of the adrenal cortices by the administration of ACTH with simultaneous decrease in the amounts of cholesterol and of ascorbic acid in the glands. This tends to indicate that cholesterol may be the mother-substance from which the adrenocortical hormones are manufactured in the system and during this bio-chemical transformation, ascorbic acid possibly may have some essential role. Similarly it is also of interest to note that while the adrenal steroid decreases the utilization of glucose and converts amino-acids into glucose, its counter part in the medulla (*i.e.* adrenaline) stimulates the conversion of liver glycogen to blood sugar. A steroid in the former case and a basic amine in the latter are exhibiting physiological phenomenon in different ways to afford identical product. The puzzling but allied behaviours of salicylic acid in the treatment of rheumatic diseases, is understood when one finds[13] that it has the property of activating pituitary and suprarenal glands for the production of steroids like cortisone. The curiosity however increases when a product of a quite different nature as found in chloroquin (a 4–aminoquinoline) is found to exert a similar physiological action. Of course the phenomenon may also be due to the stimulation and functioning of pituitary and suprarenal glands, as cinchoninic acid also a 4-quinoline derivative is known to affect[14] the above glands.

The functioning of the above different products may now be discussed on the basis of dynamic physiology of the human system. During any physiological disorder we will have to look into the functioning of body tissues, the effective endocrine glands, their regulating centre (anterior part of the pituitary gland) and the central nervous system. For any adjustment, a body tissue may stimulate the central nervous system and this through the hypothalamus may affect the anterior pituitary gland to produce its specific hormone. The latter in turn stimulates a "target" gland, the adrenal cortex, to produce or release other hormone or hormones to affect the body tissues[5, 6]. Schematically the idea may be represented as shown in Fig. II, below :—

FIG. II



On the above hypothesis ACTH (hormone of the hormone-regulating centre), or, cortisone (in fact hydrocortisone of the largest gland suprarenal), or salicylic acid, quinolinic acid or their other derivatives functioning in one way or the other in the path way (c) in Fig. II, may exert similar type of physiological action. The question is whether any more simple, or, a less toxic and easily administrable product may be synthesized for safe use in the disorder such as noticed in rheumatic cases ?

The genesis of any of the physiological principles present in the system may be considered to be due to metabolic disintegration of our food materials. We know that all three of the principal foodstuffs *viz.*, carbohydrate, protein and fat, in their breakdown to yield kinetic energy, undergo a series of reactions and traverse a common path known as the tricarboxylic acid cycle. They in turn, and almost interchangeably, can be built up from the intermediate compounds of that cycle for the storage of potential energy. Nothing more definite is yet known. The question may be raised whether by the 'trial and error' method we may isolate a factor from and during the fragmentation of one or other protein molecule by any process of hydrolysis or proteolysis.

It is known that the follicle-stimulating hormone of the anterior lobe of the pituitary stimulates the production of œstrogen. This in turn may stimulate the production of a second hormone, or, may inhibit the formation of its own originator. In all these biochemical reactions some may help and some may retard one or other chain of movement between the active principles formed in the core of the hormone-regulating centre (anterior part of the pituitary gland) and the tissue effecting hormones. The phenomenon may then be compared to the well established theory on the mode of action of sulpha drugs where the inhibition of the formation, or the availability of the para-amino-benzoic acid (PABA) for the metabolism of bacterial cells is considered to be the cause of the chemotherapeutic activity of the sulpha group of compounds. This tends to direct our attention to a more systematic study of the cytological problem in the formation of one or other constituent that is known to regulate, stimulate or formulate the biological phenomenon in the human system.

Conclusion.—In this short review attention has been drawn to different lines of thought on which chemists and biologists may ponder in order to find out clues to many unsolved physiological problems. Our knowledge of the formation as well as of the interrelationship of diverse compounds in different glands is still obscure. The pituitary glands produce the "trophic" hormones which stimulate hormone secretion in the "target" glands. The formation of the former is dependent en the blood level of the latter. When and why is this blood level altered ? Why does the hypothalamus undergo a change to exert a nervous influence, and thereby help in the production of ACTH ?

Chemical sciences have been applied to produce the natural material or its equivalent. More simple products may be searched for. Many more postulations are possible but the question is wherein lies the centre of reaction for which products of diverse nature (natural or synthetic) are found to play a similar role ?

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OBSERVATIONS BASED ON TWO HUNDRED AND FORTY-FIVE CONSECUTIVE GASTRECTOMIES FOR DUODENAL ULCER DISEASE AT BROOKE ARMY HOSPITAL

In a commendable effort to report true comparisons between the end results of operations for duodenal ulcer which differ technically but are performed on the same general type of patient population by surgeons of similar experience, the authors herein publish the results of 245 consecutive subtotal gastrectomies, half of which consisted of 75 per cent resection of the stomach with restoration of gastrointestinal continuity by a retrocolic, no-loop, narrow-stoma, end-to-side jejunostomy, hereinafter referred to as the "advocated operations." In the remaining cases, hereinafter referred to as the "other operations," resection of about 60 per cent of the stomach was done, with restoration of gastrointestinal continuity by an antecolic wide-stoma gastrojejunostomy. In addition to some unavoidable inequalities in the two groups of cases was the important observation that indications for surgical intervention were apparently less definite in the "other operations" than in the "advocated operation" category, since the average duration of the disease was greater in the latter group and 25 per cent of the operations were performed as emergency procedures, whereas only 10 per cent of the operations in the "other operations" group were classified as emergency interventions.

Without discounting this probably important observation, the follow-up results indicated a decidedly lower incidence of all degrees of the postgastrectomy syndrome in the "advocated operation" group. Loss of weight and failure to regain preoperative weight were more common in the "other operations" group. Estimation of the influence of the extent of operation on the incidence of the postgastrectomy syndrome and on postoperative weight was considered inconclusive.

An increased extent of resection must be held responsible for an increase in the incidence and severity of the postgastrectomy syndrome only if the employment of the small stoma and the retrocolic antiperistaltic anastomosis can be shown to be superior to other technics. Since

results reported at present support this theory, the authors express the opinion that the incidence and severity of the postgastrectomy syndrome are directly proportional to the extent of gastric resection.

The length of the afferent loop, as determined by its relation to the colon, was calculated to have at least a minor effect on the incidence and severity of the postgastrectomy syndrome. The retrocolic short afferent loop appeared to be associated with a lower incidence and less severity of the postgastrectomy symptoms, particularly with regard to the more severe classifications of the syndrome. Preoperative weight was regained in a higher proportion, and loss of weight discontinued in a lower proportion of the patients in whose cases the retrocolic anastomoses were done.

A lesser incidence to the postgastrectomy syndrome was encountered after operations in which an antiperistaltic anastomosis was employed. The duration of all degrees of severity of the postgastrectomy syndrome was less after the operation in which the narrow stoma was made.

The narrow stoma proved to have primary importance in eliminating the need to lie down after meals. Nausea, abdominal discomfort and palpitation were less frequently complained of with the small stoma.

Reflux of the contents of the afferent loop into the gastric remnant results in biliary regurgitation and constipation. This is more common after the retrocolic antiperistaltic anastomosis, but it is acceptable in view of the many advantages of this hook-up.

As a result of their study, the authors conclude that the operation which combines the most important factors in the prevention of the postgastrectomy syndrome with factors considered important in the prevention of recurrent duodenal ulcer consists of resection of at least 75 percent of the stomach, with all the antral mucosa, and reconstruction of gastrointestinal continuity by means of a retrocolic no-loop antiperistaltic small-stoma gastrojejunostomy.—Schirmer, J.F., and Bowers, W. F., *Arch. Surg. 75*: 447, 1957.

ENVIRONMENTAL IMPEDIMENTS TO BREAST FEEDING

There are today so many cogent environmental circumstances conducive to artificial feeding that it would seem only reasonable to believe that it is they, rather than any inherent or genetic factors, which are responsible for the modern trend toward bottle feeding. Some of these circumstances are:

(1) It is fairly well established that artificially fed babies do just as well, physically at least, as breast fed infants. This fact is basic to any rationalization of elective or semi-elective artificial feeding. Psychologists, psychiatrists, sociologists, anthropologists maintain, of course, that artificial feeding is detrimental to the baby from the viewpoint of his emotional and psychological development; but this is a theoretical concept and lacks any proof. General experience, moreover, would seem to refute it.

(2) Early discharge from the hospital precludes any sound evaluation of the mothers' lactational ability and, in questionable cases, the most bother-free course for the pædiatrician is to put the baby on a bottle.

(3) The confining demands of breast feeding interfere with most types of employment and many social activities. Witness the rise of the "baby-sitter."

(4) A desire to restore and maintain her girlish figure causes many a young mother today to embark on a reducing diet as soon as she goes home from the hospital. Low caloric diets and plentiful milk production do not, as a rule, go hand in hand.—(Nicholson J. Eastman, M.D., *Obstetrical & Gynaecological Survey*, Feb. 1958, via *Current Medical Digest*, May '58).

PRURITUS*

T. V. VENKATESAN, M.B., B.S., F.C.C.P., F.A.I.M., F.A.C.A., F.D.S.,
Madurai

This is a fascinating subject but is an enigma. Itching is produced by subliminal stimulation of the nerve endings for pain; if a certain threshold of intensity is exceeded, itching disappears and pain is produced. It does not mean that the itching sensation is the same as mild pain. The two are distinct from each other. It has been widely held that besides the weak stimulation of the pain apparatus, there are other factors at work to bring about the sensation of itching. Drs. Ehrenwald and Konigstein are of opinion that the mechanisms of both pain and touch must be intact to produce itching. It is also suggested that the vegetative nervous system plays a part in the development of itching. To produce itching, the stimulus must be not only subliminal but must continue to act over a certain period. Therefore, the itching is a result of a temporarily persistent excitation too low in intensity to cause pain and too continuous to register a prick.

There are two responses to pain-stimuli:--(1) an immediate flash of pain or fast pain and (2) a more diffuse or a slow pain. Similarly there are two distinct components in each:—one, the pricking sensation and the other a burning sensation and are carried respectively by myelinated and unmyelinated fibres. To produce the allied sensation of superficial tickle, the stimulus must be moving or intermittent. Tickling is due to stimulation of a similar superficial pressure receptor. Graham maintains that tickle can occur in the absence of touch following local asphyxia. The tickle disappears in areas of secondary hyperalgesia.

Around a histamine puncture an area of itchy skin develops which, on being rubbed gives an abnormally itchy sensation. Bickford believes a nerve conveying itchy sensation, as spontaneous itch. Spontaneous itchings are different because he found that when asphyxia is produced by pressure cuff, the itchy skin disappears whereas spontaneous itch does not alter. Local injection of 5% tetra-ethyl-ammonium chloride inhibits production of itchy skin without affecting the spontaneous itch. An itchy skin cannot be detected in the areas which have lost tickle-sensation although touch may be retained. Spontaneous itching is not felt where pain to pin-prick is dulled.

Aetiology of pathological itching.—It is often assumed that itching is the resultant of cutaneous changes. This is not correct. Factitious urticaria is hardly pruritic at all. Itching in skin lesions nearly always starts earlier than the visible changes.

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*Specially contributed to the Antiseptic.

In acute eczema, itching most often occurs due to the development of the blisters and abates while the œdema of the epidermis is still at its height. Itching in liver disease and diabetes is unaccompanied by any inflammatory reaction in the skin. Clinical lesions raise the itch-excitability. Persistent irritability of the skin after an itching dermatitis is called "mnemodermic." The mnemodermic (*sic.*) may be intensified by psychical influences. The spontaneous itching in eczema and urticaria occur before and during an early development of fresh lesions. In fully developed lesions, these substances are diluted by œdema and itching is now induced by external stimulus acting on the skin. Pruritus may be generalized or localized. In pruritus vulvæ, in addition to any organic cause *e.g.*, diabetes or trichomonas infections, there is an underlying psychological stress but for which the symptoms might be tolerable. Unrelieved sexual tensions should be blamed.

SCHIZOPHRENIA

L. Alexander and M. Moore in a general review of the subject, state that schizophrenia is considered to be a series of fairly characteristic patterned syndromes, possibly each with its own pattern of development, and treatment must be balanced to suit the individual patient. There appears to be a great variety of benign and malignant forms of schizophrenia. Variables affecting prognosis favourably are: recent onset, high intelligence, relatively unimpaired capacity for abstract categorical thinking, good educational background, better than average occupational status, stress-induced onset, and an autonomic reaction pattern (adrenalin mecholyl test pattern) similar to that of depressions. The authors consider that schizophrenic illnesses in highly intelligent adolescents (pseudoschizophrenic neuroses) respond well to psychotherapy. Schizophrenic patients showing an adrenalin-mecholyl test pattern similar to that of depressions respond well to electro-shock therapy. Patients with epinephrine-precipitable anxiety do better with insulin and the new drugs. Response to all types of treatment declines with duration of illness; this is most markedly so for the shock and coma therapies, somewhat less for the drug therapies and for psychotherapy, least for frontal lobotomy.—(*Am. J. Psychiat.*, January, 1958 via *Med. Jour. Austral.*).

DEPTH OF ANÆSTHESIA SIGNS

It must be emphasized that no single clinical sign can be used as a reliable indication of the depth of anæsthesia. Signs vary from patient to patient, and from anæsthetic to anæsthetic. They are influenced by oxygen lack, carbon dioxide accumulation, and unquestionably by other as yet unidentified factors. Even resort to objective methods is disappointing, for it is not always possible to correlate electroencephalographic tracings or blood concentrations of anæsthetic with a clinical estimate of the degree of narcosis. Careful observation and minute to minute appraisal of all the clinical signs, together with whatever other objective measurements are available, provide the greatest safety for the patient.—(Robert D. Dripps, M.D., James E. Eckenhoff, M.D., and L.D. Vandam, M.D.,: *Indroduction to Anaesthesia*, via *Current Medical Digest*, July 1958).

PAPER ELECTROPHORETIC PROTEIN PATTERNS OF KALA-AZAR SERUM*

PRATUL GOSWAMI, M.B., B.S.
AND
R. K. BARUAH, M.SC., PH.D.
Department of Bio-Chemistry, Assam Medical College, Dibrugarh

The clinicians are becoming more and more interested in the application of electrophoretic protein-patterns in the diagnosis and prognosis of diseases but few studies have been made of the electrophoretic patterns of serum-proteins of patients suffering from Kala-azar of visceral leishmaniasis. Cooper *et al* (1945) studied two cases and Benhamou *et al* (1949) reported on two other cases. Sen Gupta *et al* (1953) analysed the patterns of nine specimens of sera from kala-azar patients. These investigators found that the most characteristic feature of these patterns was a gross increase in the gamma-globulin fraction associated with marked decrease in the albumin fraction. They used the classical method of free electrophoresis.

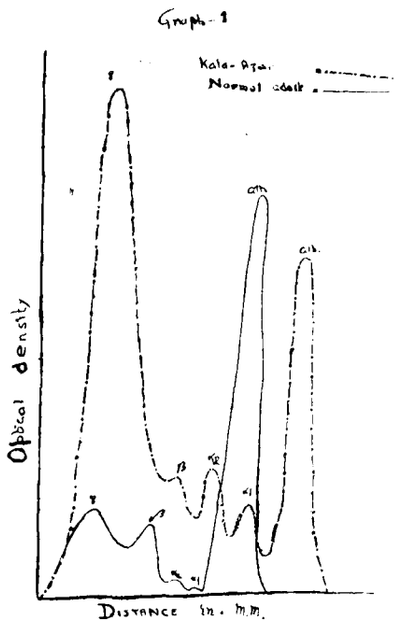

Fig. 1. Electropherogram of a normal adult and of a patient suffering from Kala-azar. The origin of fractionations in both the cases is same but the mobility of the albumin fractionation in the normal is less than the mobility of albumin fraction in Kala-azar serum.

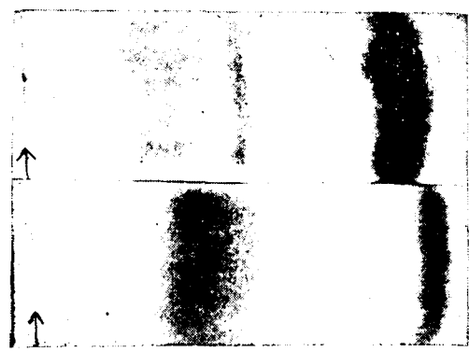

Fig. 1-a. Photograph of the actual fractionations of the protein in filter paper. The upper one represents the normal and the lower one for patient suffering from Kala-azar. The mobility of the albumin fraction is less in normal. The line of application of the sera marked. ↑

There has been an increasing application of paper electrophoresis, in clinical practice being the much simpler and cheaper of the two methods for routine analysis. Only two instances are found in the literatures where kala-azar sera have been subjected to paper electrophoresis *viz.*, Opponheimer and Vinas (1952) and Banerjee *et al* (1955). In the present

* Specially contributed to the Antistptic

investigation, the eletrophoretic patterns of kala-azar sera have been examined, before, during and after treatment to see if the patterns change.

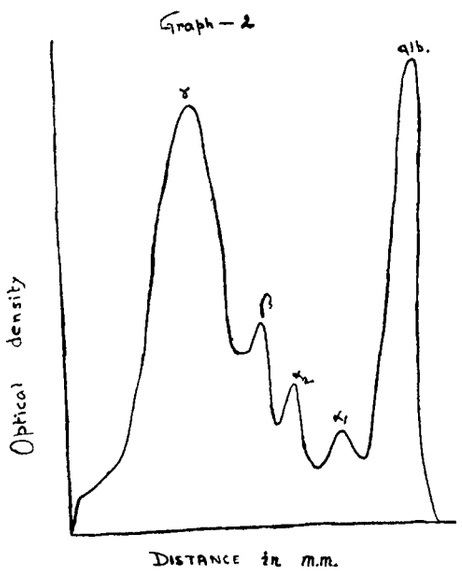

FIG. 2. The electropherogram of a patient suffering from Kala-azar complicated with congestive cardiac failure.

Clinical materials.—Ten proved cases of kala-azar were studied. The electrophoretic analysis were carried out in six cases before treatment began, and in two cases (No. 9 & 10), the sera were examined at the end of a course of urea-stibamine treatment with a total dose of 3·5 g. in each case. In case No. 7, the sera were taken for analysis before treatment started in the first instance and in the second instance in the middle of the treatment after a total dose of 1·3 g. of urea-stibamine had been given. In Case No. 8 which is of the resistant type the first analysis was made before the treatment and the second after the administration of a total dose of 3·5 g. of urea-stibamine followed by 300 mg. of pentamidine.

Methods.—A specimen of blood was collected while on empty stomach. Electrophoresis of the sera was carried out according to the technique of Grassman and Hannings (1952), at 110 volts for a period of twelve hours in an Elphor open strip electrophoresis apparatus. A sodium barbital acetate buffer with a pH of 8·6 and an ionic strength of 0·1 was used. The paper strips used were Schleicher and Schull No. 2043a. The filter strips were prepared, dried and stained with Brom-phenol blue (0·01%) following the conditions of drying and staining as set up by Jencks, Jetton, and Durram (1955). The stained strips were then oiled with mineral oil, drained for two hours and then scanned in the Elphor scanner. Graphs were drawn and areas found by planimetry. The total proteins were determined by Micro-Kjeldahl method, and the results are given in Table I (see *p. 823*).

Discussion.—It will be seen from the Table that in untreated cases the serum protein patterns show a significant rise in the gamma-globulin fraction with a fall in the amount of albumin in the sera (Cases No. 1 to 6). In the two instances (Cases No. 9 and 10), the electrophoretic patterns tended to return to normal,

after a course of treatment *viz.* :—52·8% of albumin and 34·2% gamma-globulin in case No. 9 and 59% albumin and 27·1% gamma-globulin in case No. 10. In both these cases, there was a general improvement in the patient's condition. In cases No. 7 and 8 no such significant changes in the serum protein patterns were found. These cases did not show any clinical improvement, the temperature remained unabated, the œdema in case No. 7 persisted and there was no improvement in the anæmia and in general health. In case No. 8 which is of the resistant type, the electrophoretic pattern revealed a fall in the fractions *alpha* 1, *alpha* 2, and *beta* globulins and further rise in the gamma-globulin fraction while the percentage of albumin remained almost stationary. The total protein showed an increase from 8·5 g. to 12 g. per cent.

TABLE I

Showing the Paper Electrophoretic Analysis of Kala-azar sera

Sera-components expressed as percentages of total proteins

Case No.	Total protein	Albumin	*Alpha* one	*Alpha* two	*Beta*	*Gamma*	Rmarks
1	7·00	28·90	3·30	4·00	8·90	55·00	Before treatment
2	5·30	27·20	6·40	5·60	8·60	52·10	Before treatment. The case was complicated with congestive cardiac failure
3	6·80	23·70	4·30	2·60	13·90	55·10	Before treatment
4	9·00	20·00	4·80	7·10	15·90	52·10	Before treatment
5	8·00	24·20	6·60	6·00	13·20	49·60	Before treatment
6	7·98	23·53	9·69	7·96	8·30	50·56	Before treatment. Complicated with œdema of legs and ascites
7 (*a*)	4·40	20·00	5·20	8·10	5·90	58·90	Before treatment. Complicated with œdema
(*b*)	9·70	19·70	4·54	9·85	11·37	54·55	After injection of 1·3 g. urea stibamine. Oedema as before.
8 (*a*)	8·50	13·30	6·10	3·30	5·60	71·90	Before treatment
(*b*)	12·00	13·46	1·92	·96	1·92	81·74	After a course of treatment with urea stibamine (total dose 3·5 g.) and 300 mg. of pentamidine
9	6·40	52 80	3·10	4·20	5·60	34·20	After a course of treatment with urea-stibamine (Total dose 3·5 g.).
10	8·00	59·00	6·10	4·90	2·46	27·10	After a course of treatment with urea-stibamine (Total dose 3·5 g.).

Lloyd and Paul (1928) observed that profound changes take place in the blood-protein patterns in the course of the treatment, the globulin rapidly falling and the albumin rising although there were no marked changes in the total serum-proteins. They determined the G/A ratio and found a gradual fall in it with a course of treatment. In the present study in

cases No. 9 and 10 where patients responded to treatment, this change in the protein-patterns was noticeable and the fall in the globulin fraction was mainly confined to the gamma-globulin. The second case of Cooper *et al* was a convalescent case in which the deviation of the normal protein-patterns was much less marked whereas in the first case which was an active case the gamma-globulin was seven times the normal concentration with a total serum-protein of 12·10 g. per cent. Though the number of cases studied here are limited, it may be possible to correlate electrophoretic patterns with the clinical findings in the course of treatment of kala-azar.

Summary.—1. Electrophoretic patterns of protein in the sera of ten cases of kala-azar have been studied by paper electrophoresis. There is a significant rise in the globulin and a marked fall in the albumin contents.

2. In two cases the electrophoretic protein-pattern was profoundly altered in response to the treatment and in the other two cases, there was neither an alteration in the original serum-protein-patterns nor any improvement in the clinical picture.

We are grateful to Prof. M. N. Bhattacharyya, B.A., M.B., D.T.M., D.C.H., M.R.C.P., for permitting us to utilize the clinical material in writing this article.

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WHY OPERATE ?

When you ask them why they do it, people who climb mountains have a stock answer.

"Because they are there," they tell you. For them, that's reason enough. There are times when surgeons appear to be addicted to the same line of reasoning, when we fall prey to similar "Matterhorn madness." Some of our more heroic extirpative efforts get a little out of hand at times and we are carried away. The urge to take out diseased organs simply because they are there, can be overwhelming.

It is necessary, occasionally, to sit back, to survey the terrain and to ask ourselves, "Am I doing this operation for my patient or *for my ego* ?"

To answer the question, you must first be able to answer 3 others :

1. What happens if you don't ?
2. What happens if you do ?
3. Which is better for the patient ?

The facility with which a technical exercise can be carried out may be most impressive but it is the evaluation of what the operation has to offer the patient that determines whether it will last or be thrown into discard. —(E.R.S., *Western Journal Surgery, Obst. and Gynae.*, January-February 1958, via *Current Medical Digest*, Apr. 1958).

GRADIENTS OF BLOOD-PRESSURE IN SENESCENCE*

B. B. DOTTO,

Chief Medical Officer to the Police Co-operative Life Insurance Society Ltd., and Consulting Medical Adviser to Several Life Assurance Companies and Provident Insurance Societies (1940 to August 1956)

A Study of Indian Male Snbjects between the ages of 50 and 80 years.

MY article on the normal blood-pressure of the aged and the old, published in the *Punjab Medical Journal* for September, 1956, related to my study of 4,560 male subjects, between the ages of 50 and 80 years. An investigation of this nature had not previously been conducted in India, Pakistan, Burma and Ceylon. I now present in this paper the results of my further investigation, comprising 6,731 entrants, during a period of 11 years (1947–'57).

I have prepared and published two dozen blood-pressure tables, embracing 10,000 Indians, 25,952 Indians, 41,010 Indians, 12,000 Bengalees, 6,000 Biharis, 8,700 females, 4,000 Gurkhas, 2,500 Muslims, 15,362 children, 1,664 females during gestation, etc.; these blood-pressure tables have been accepted as the standards for India and Pakistan, and incorporated in all text-books of reference on Insurance. They are also largely used in Ceylon, British East Africa, South Africa, F.M.S. and the Middle East, for assessing Indian lives. I have conducted investigations on the normal blood-pressures of the Hindus in Uttar Pradesh, Madras, Bombay, and Madhya Pradesh, of Oriyas, Assamese, Garhwalis, Punjabees, Rajputs and Anglo-Indians.

With the imposition of 'Estates duty' recently, elderly persons are often taking out specialized life policies for the payment of the estates duty amounts involved. In addition, the Nationalized Life Insurance Corporation, in order to popularize life insurance business, is granting life policies to persons aged over 50 years. The acceptance of these proposals on the lives of senescents and the revival of lapsed policies on the lives of persons aged 55 years and over have also been a headache to medical examiners and life assessors in the absence of a standard blood-pressure table based on Indian experience. The new table is therefore, likely to be more welcome than its predecessor to the medical and insurance professions.

The average blood-pressure of Indians in the different states shows a progressive increase—as judged by the thirty and more blood-pressure investigations conducted by me during the last two decades. This tendency has also been recently noted by many American workers. I have not so far come across any mention of this important and interesting fact by other Indian observers, although considerable attention has been focused on

* Specially contributed to the ANTISEPTIC.

arterial hypertension which is the commonest among heart diseases. From the mortality experience of 20 leading Indian Life Assurance Companies collected by me for the quinquennium ended 31st December, 1951, it is found that the death-rate from arterial hypertension and cardio-vascular and renal diseases was particularly high and progressively on the increase. American experience has shown that degenerative diseases of the cardio-vascular system and associated disorders accounted for about half of the deaths at all ages and for a higher proportion after the age of 45 years (*Post-Graduate Medicine, 10*: 5, November, 1951).

Weight is an important and consistent factor in blood-pressure changes. With an appreciable increase in weight there is 'progressive' increase in the average systolic and disstolic blood-pressures, irrespective of age or sex. The effect of height on blood-pressure, as disclosed in numerous investigations, is negligible. These two points should be remembered in evaluating the blood-pressure of a person.

The progressive elevation of average blood-pressure is mainly due to the stress and strain of modern civilization, over-indulgence in food, specially of the protein variety, lack of physical exercise, undue mental efforts, matrimonial worries, worries over children, over-work, and the excessive use of alcohol, narcotic drugs, tobacco, tea and coffee. Last but not least, come business and financial worries which are two prolific causes of elevated blood-pressure. Progressive elevation of the average blood-pressure is an important fact which should engage the careful attention of medical practitioners.

It is well known that in individuals past middle life (say 50 years) hypertension is very common being frequently associated with the expenditure of great and untiring energy. It is also a fact that death occurs suddenly, and the individual has remarked shortly before death that he had never felt so well in his life. Such instances are known to many medical practitioners. Lord Dawson of Penn very pertinently said :—

> "Hyperpiesis is not a condition with a defined territory, it has no threshold. It begins as a habit of the body and mind which is not diseased, but may lead to disease : it creeps into our lives without our ken—while we are fit and efficient : it gives no evidence of its presence, or only such sign as a healthy, thinking individual would ignore and unless some lucky defect in health brings about medical examination and there is a disclosure, no revelation occurs until definite damage to life compels an acknowledgement that the frontier of health has been crossed and return will be difficult or impossible."

My own observation that arterial hypertension occurs very often in the middle and older age-groups has been confirmed by other workers. Many observers have shown that a high systolic pressure and a slight to moderately raised diastolic pressure are

found in the majority of persons aged 60 years and over. It is an accepted fact that old age is usually accompanied by a higher blood-pressure, due to the loss of fat and a general shrinkage of the tissues. I have observed that after 80 years, both systolic and diastolic pressures exhibit an ebb-tide. The systolic pressure decreases by 10 to 15 mm. and the diastolic pressure decreases by 5 to 7 mm. respectively. The number of such persons examined is not sufficiently large to draw any definite conclusion.

The average blood-pressures of the 6,731 subjects, aged 50 to 80 years, comprised in my present investigation, will be found in the following tabular statement, arranged according to age-groups.

Table I

Showing the average systolic, diastolic and pulse pressures in Indian males in senescence

Age-group	Number of entrants	Average systolic pressure	Average diastolic pressure	Average pulse pressure
50—54	2,000	131·7	83·0	48·7
55—59	1,736	132·8	84·0	48·8
60—64	1,005	135·6	85·2	50·4
65—69	720	138·7	88·2	50·5
70—74	650	142·0	90·2	51·8
75—79	400	146·4	92·4	54·0
80	200	150 5	94·2	56·3

It will be seen that the average systolic, diastolic and pulse pressures in the 6731 Indian males in senescence are 139·6, 88·1 and 51·5 mm. Hg. respectively. In my 1955 investigation comprising 4,560 subjects of similar ages the corresponding figures were 138·6, 88 4 and 49·2 mm. Hg. respectively. This is also an indication of the progressive increase in the normal blood-pressures of Indians.

An analysis of the figures reproduced in the above blood-pressure table, shows :—

(*a*) During the 30 years from the ages of 50 to 80, the systolic pressure rises from 137·7 to 150·5 mm., *i.e.*, there is a total rise of 18·8 mm. or 0 6 mm. per year ; (*b*) the diastolic pressure rises from 83·0 to 94·2 mm., there is a total rise of 11·2 mm. or 0·3 mm. per year ; (*c*) the pulse pressure rises from 48·7 to 56·3 mm., there is a total rise of 7·6 mm. or 0·2 mm. per year.

From the above blood-pressure table, it is easy to find out the "average" or "normal" blood-pressure of a person in senescence at a given age. The term "normal" is used in medicine in two ways : (i) characteristics distinguishing the larger portion of a population termed "normal" ; (ii) also the term is

applied to individuals who are regarded as non-diseased. In the first case, the word is used in a statistical sense and in the second in a medical sense.

From a statistical point of view the "normal" is vaguely the state characterizing the majority of the population. Most individuals agree more or less closely with the mean, but many others show some divergence. In practice, when trying to form a conception of the traits characterizing certain materials or population we chiefly notice that observations made most often, *i.e.*, the maximum incidence or its mode from this point of view, represent the *normal* value.

"Normal" blood-pressure, therefore, does not require the applicant to come exactly within the average figures indicated in the above blood-pressure table, but he should come within certain extremes of systolic and diastolic readings—while maintaining a relative pulse-pressure. Broadly speaking, as pointed out long ago by Dr. Francis Ashely Faught, the systolic, diastolic and pulse-pressures should approximately maintain the relationship of 3 : 2 : 1, *i.e.* systolic 120; diastolic 80; and pulse 40; although slight variations from these are compatible with a normal cardio-vascular system.

TABLE II

Showing State-war distribution of the 6,731 entrants

1.	Bengalis	...	2,560
2.	Biharis	...	913
3.	Madras Hindus	...	700
4.	Bombay Hindus	...	600
5.	U.P. Hindus	...	536
6.	Muslims	...	400
7.	Assamese	...	300
8.	Oriyas	..	230
9.	Punjabees	...	200
10.	Anglo-Indiaus	...	172
11.	Parsis	...	120
	Total	—	6,731

The total of the 6,731 aged persons, dealt with in this investigation comprise, natives of different states as detailed below and are therefore, fully representative :—

The blood-pressures of the subjects included in this investigation were recorded, at least two hours after the last meal, following my standard practice. It was definitely ascertained that the subjects were not under the influence of alcoholic drinks, narcotic drugs or tobacco at the time of the examination. The blood-pressures were not recorded during a period of excitement or fatigue or after one or two cups of hot milk, tea or coffee or exposures to fierce heat in summer or extreme cold in winter; for and exposure to cold registers a rise. These precautions at the exposure to excessive heat tends to cause a fall in blood-pressure time of recording blood-pressure have yielded accurate and good results.

The auscultatory method of recording blood-pressure was alone used and more than one additional reading was taken in case of the slightest doubt or suspicion. The blood-pressure was

recorded on the left arm but in cases of doubt, the blood-pressure of the right arm was also recorded. Barring anatomical abnormalities, the readings on both the arms were approximately the same. Blood-pressure must ordinarily be always recorded on the left arm, as it is nearer the heart and there is not likely to be any appreciable diminution of the maximum impulse, such as might occur if a more distant member, like the right arm or leg was used for the purpose. Recording blood-pressure on the left arm is the accepted practice and so should be employed by all observers for the sake of uniformity.

TABLE III

Showing the religions and personal habits and customs of the 6731 entrants

	5,967 or 88·64	%	Hindus
	400 or 5·94	,,	Muslims
	194 or 2·88	,,	Christians
	170 or 2·58	,,	Buddhists
	5,496 or 81·65	,,	On mixed diet
	1,235 or 18·34	,,	Vegetarians
	1,127 or 16·74	,,	Indulge in alcoholic drink
	6,022 or 89·4€	,,	Smoke cigarettes, consume tobacco or nicotine in some form or other.
	762 or 11·32	,,	Addicted to narcotic drugs, which according to the consumers were good for their health, stomach, rheumatism and sleeplessness
	5,730 or 85·12	,,	Chew pan supari
	1,356 or 19·99	,,	Unmarried
	5,375 or 79·85	,,	Married or widowers
of those	5,375 married	,,	
	758 or 14·10	,,	Were childless
	4,617 or 85·89	,,	Had one or more children

The palpatory method of determining blood-pressure was adopted in a small percentage (about 3%) of cases in whom the arterial sounds were not clearly audible. This was mainly due to a deep-seated artery and quiet and slow heart action. Such persons usually have a lower blood-pressure. Experience has shown that arterial thickening does not cause a higher reading. When the heart sounds are not audible, a few bending movements of the body usually improve audition.

I have come across a number of nervous subjects (about 15%) during this investigation who had to be re-examined a couple of hours or a couple of days after the first examination to eliminate nervousness or emotion, which usually elevates the systolic blood-pressure by 30 mm. or more at the first one or two readings. Nervousness has only a slight effect however, on diastolic pressure (only about 10%). Hence even a slight variation of the diastolic pressure from the normal is of great importance and requires further careful investigation.

Blood-pressure has been known to be greatly affected by excitement, position, time, digestion, etc., so it is imperative that the blood-pressure reading should be taken after eliminating or minimizing the possible influence of these adverse factors

It is well to remember that the sensations produced by the arm compression are often quite disagreeable, sometimes alarming to the subject and causing him to contract the muscles of the hand and arm; as a result of this, the blood-pressure, particularly the systolic, may read considerably higher than the normal. To the extremely nervous individual, before applying the arm-band, I give a pictorial album in order to divert his attention and take his mind away from the bugbear and nervousness of the examination; and there is much less psychic effect than there would be otherwise. I get excellent results by adopting this simple diversional therapy, which many others are reported to have also used with uniform success.

In the present investigation are included many V. I. Ps. and persons holding high offices in the Central and State Governments, and industrial organizations, legislators and numerous officers at high levels belonging to different services and business concerns.

The investigation is thus fully representative of all ranks, interests, vocations and professions, and the blood-pressures of these persons were taken for arterial hypertension or hypotension or merely from an academic point of view. About 30% of them were persons who had retired from service, profession or business. My grateful thanks are due to these gentlemen for their valuable and kind co-operation without which the present investigation would not have been possible.

The blood-pressure readings of the subjects included in this investigation were taken exclusively with the Baumanometers kindly supplied to me free by Messrs W. A. Baum Co. Inc. of New York. I have used the latest "Standby," "Wall-type," "300 mm" and "Kompak" models of Baumanometers.

In this investigation I used the spiral type cuffs, air-lok cuffs, new air-lok cuffs, sanigenic cuffs and simplex cuffs, also kindly supplied by the same firm. Simplex cuff is a recent introduction and is not just the ordinary plastic cuff sold in the market. It is made of closely woven nylon fabric, coated with a thin film of vinylite, which makes the finished cuff inextensible, non-absorbent and cleanable. It does not absorb perspiration or dampness, and can be cleaned by sponging with Lux or other soap and water, (cold-sterilized with alcohol or disinfectant if desired). The simplex cuff can be used on both left and right arms as well as on large and small arms with good results.

I should like to record my indebtedness to Messrs Ciba Pharma Private Ltd., Messrs Crookes Laboratories Limited, Messrs Voltas Limited and Messrs May and Baker Ltd., for their generosity in placing liberal samples of various drugs which were useful in treating a large number of hypertensive patients with success; also to Messrs Hoechst Fedco Pharma Private Ltd., Indian Representatives of Messrs Farbwerks Hoechst, A. G. for their liberal supply of "Carnigen" drops and ampoules, for treating hypotension.

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RECENT ADVANCES IN DERMATOLOGICAL THERAPY

G. M. Lewis and D. Torre state that in the field of syphilis significant advances have been made in both diagnosis and tretment. Diagnostic visualization of the spirochæte has been made easier by the use of a stain utilizing Parker 51 blue-black ink. More widespread availability of the *Treponema pallidum* immobilization test has enabled the dermatologist more readily to determine biological false-positive serological reactors. In patients suspected of having late manifestations, such as cardiovascular syphilis or *tabes dorsalis*, for which the usual serological tests are inconclusive, the T.P.I. test will frequently help to establish the diagnosis. The City of New York Department of Health currently advocates the following schedules using procaine penicillin G in oil with 2% aluminium monosterate given intramuscularly: (i) Primary, secondary and early latent syphilis or syphilis in pregnancy: 6,000,000 units—2,400,000 units first dose, then 1,200,000 units for three injections at two to four day intervals. (ii) Late latent, cardio-vascular, gummatous and osseous syphilis: 6,000,000 units in five equal doses at two- to four-day intervals. (iii) Neurosyphilis: 12,000,000 units in 10 equal doses at two to four-day intervals. (iv) Congenital syphilis: early (less than two years)—10 doses each of 150,000 to 300,000 units (adjusted to the weight of the child) at one- or two day intervals; late—same dosage as in comparable manifestations of acquired syphilis, with dosage adjusted to weight in young child. In skin tuberculosis, the use of isonicotinic acid derivatives has revolutionized treatment. Isoniazid in oral doses of three to eight milligrammes per kilogram of body weight has become the treatment of choice for *lupus vulgaris*, supplanting calciferol and other older remedies. Other true forms of skin tuberculosis such as scrofuloderma, *tuberculosis colliquativa*, *tuberculosis verrucosa cutis*, *tuberculosis fungosa* and *erythema induratum* respond to this simple treatment. Side effects and toxicity are minimal. So-called tuberculids do not respond. In vitiligo, since 1952 psoraline derivatives have been given an extensive trial. Severe local reactions and

questionable toxic effects on the liver have been reported. These disadvantages also include usually incomplete repigmentation, recurrence when treatment is stopped, and hyperpigmentation of *normal* skin areas. The *lupus erythematosus* cell and phenomenon are now recognized as specific, and their demonstration constitutes a most important advance in exact diagnosis of the systemic disorder. In treatment of discoid *lupus erythematosus*, and to a lesser degree of the systemic form the antimalarial drugs have become the drugs of choice. "Atebrin," 100 mg. once or twice daily, or chloroquine, 250 mg. once or more daily, is given in courses, one drug often being alternated with the other. In fungal infections the necessity of avoiding sensitizing drugs in the treatment of inflammatory manifestations in which *trichopyton mentagrophytes* has been isolated is stressed. In contrast, patients with *T. rubrum* infections tolerate drugs with impunity. "Asterol" in tincture or ointment, unsaturated fatty acids (undecylinic and propionic) in ointment and powder and "Nystatin" (*in moniliasis*) are additions to therapy of superficial mycoses which seem destined to remain. In systemic blastomycosis, some headway has been made with the administration of stilbamide. Referring to tranquillizing drugs, the authors state that chlorpromazine, which is effective in psychoses, is of limited usefulness in psychosomatic dermatoses. The rauwolfia compounds are free of the side effects of jaundice agranulocytosis and photosensitivity occasionally accompanying chlorpromazine therapy, but have the disadvantage of a latent period of up to two weeks, during which the patient not only experiences no relief, but frequently feels worse. Meprobamate ("Equanil" or "Miltown") seems more suitable for dermatological practice. The drug has no latent period and relatively low toxicity; occasional side effects are drowsiness, gastric discomfort, urticaria, erythematous rashes, fever, fainting spells, angioneurotic œdema and bronchial spasm. It is the authors' belief that steroids administered systemically are contraindicated in the treatment of psoriasis and for most eczematous eruptions. Their use is well established in the treatment of pemphigus, systemic *lupus erythematosus* and self-limited allergic eruptions.—(*Am. J.M. Sc.*, May 1957 via *Med. Jour. of Australia*, Nov. 30 1957).

EYE GROUND CHANGES IN TOXÆMIA OF PREGNANCY

The ocular manifestations of toxæmia are primarily retinal. These changes may be preorganic or organic. In the preorganic stage there is narrowing of the arterioles with spasm, especially of the smaller branches. Similar changes have been observed in the conjunctival vessels by Landesman. Oedema of the optic disc is prominent. Cotton wool exudates and small radial hemorrhages occur. These are acute manifestations. When eclampsia persists hyaline and lipoid deposits appear in the retina ushering in the organic phase.

Proper management usually controls these cases, but if untreated the toxæmia may progress to the organic stage in which sclerosis of the vessels sets in and hæmorrhages, exudates, and œdema of the retina appear. Alterations in the vessels in the preorganic stage indicate the progress of the toxæmia. If these changes do not progress, termination of the pregnancy may be unnecessary. However, if organic changes and retinopathy appear, the pregnancy must be terminated.

Retinopathy is always a serious sign, especially with regard to the prognosis of the child's life. In a series observed by Divisova and associates fœtal damage was encountered in 83 per cent of the cases suffering from retinopathy. Retinal separation may be caused by the formation of œdema fluid beneath the retina. Such a detachment usually does not require surgery.—(*N. Y. S. J. Med.*, 15-12-'57).

BIOGENIC STIMULATORS*

S. C. LAHIRI, M.D.,
Department of Medicine, Calcutta National Medical Institute and Chittaranjan Hospital, Calcutta

FILATOV postulates that a living tissue, whether of animal or vegetable origin, when placed in an unfavourable environment or a struggling condition reacts by development within itself of substances which would help the viability of the tissue to continue under that circumstance. He called these newly developed substances "*Biogenic Stimulators.*" These biogenic stimulators, developed in one tissue, may be used to help another homo- or heterogeneous tissue, or the organism as a whole, in biological distress or in a diseased condition. From the descriptions of patients and photographs supplied in the Filatov's lecture monograph it appears that the therapeutic application of the above principle may produce remarkable cures in many practically incurable ophthalmologic and dermatologic pathological conditions, a result hitherto unattainable by any known therapy.

In 1934. he published his observations that in corneal grafting, the cornea taken from a deadbody and stored for 1 to 3 days at a temperature of 2° C to 4° C gave better results than fresh ones obtained direct from a donor. Next, in treating skin diseases he began to graft the skin of dead bodies stored at a low temperature for seven days and the effect obtained exceeded all expectations. Later he noticed that any tissue of man or animal could be used to obtain a curative effect and that this tissue need not morphologically correspond to the diseased tissue. Moreover this tissue need not necessarily be grafted in the vicinity of the diseased tissue or organ. Transplantation of tissue in cold storage was much more effective than fresh ones.

The following tissues have been used in the Odessa Institute, of Ophthalmology :—

Skin, muscle, spleen, testes, brain tissue, nerves, vitreous body, mammary gland, choroid, retina, placenta, peritoneum etc.

Filatov's reasons are that any tissue, isolated from the body and stored in unfavourable but not lethal conditions, undergoes biochemical readjustment and produces special substances—*biogenic stimulators*, which maintain the vital functions of this tissue ; when introduced into a diseased body, they in turn stimulate the vital functions, thereby leading to recovery.

Biogenic stimulators are also obtainable from the plant kingdom. Green leaves stored in dark places, where chlorophyll fails to come in contact with sunlight, becomes a good source of this substance. Later Filatov and his associates tested the mud

*Specially contributed to the ANTISEPTIC

from the Odessa Estuary, reputed for its curative properties. Since micro-flora and micro-fauna largely contribute to the formation of the mud, it is to be expected that it will have a storage of the biogenic "stimulators," formed by the life-and-death-struggle of the micro-organisms. It was actually found to be so.

It has also been discovered that an intact body, when subjected to an unfavourable but not lethal internal or external condition, reacts by development of biogenic stimulators, which have been found to increase the various protective functions of the body. On the whole, the actions of biogenic stimulators are more systemic than local, though local healings also occur.

Nature of the biogenic stimulators.—1. They are thermostable. They retain their biological activity when heated to a temperature of 120°C for one hour.

2. They are water-soluble and can be extracted by boiling in water and in case of mud by water extraction or distillation.

3. They are neither proteins nor ferments. They do not produce any anaphylactic phenomena.

4. The potency of the extract can be retained for at least twelve months. These extracts can be subjected to more than one sterilization.

Their chemical characters, so far elucidated, though not yet completely known, are complex in nature.

Methods of therapeutic administration.–(1) Transplantation of intact tissues, *e.g.*, skin etc; (2) Subcutaneous implantation of minced tissues; (3) Injections of heterogeneous tissue, extracts, *e.g.* of skin, brain tissue, testicle, peritoneum; (4) Subcutaneous injections of liquid extracts from leaves and muds; (5) Oral administration; (6) local application; and (7) Micro-enemas.

Prolonged and repeated courses of administration are required according to the nature of the disease.

Some of the pathological conditions successfully treated by the biogenic stimulators are:—

(1) Eye diseases, like corneal inflammation, choreo-retinitis of myopic people, retinitis pigmentosa, atrophy of the optic nerve; inflammation of the uveal tract, sympathetic ophthalmia, trachomatous pannus.

(2) Other conditions like lupus vulgaris, lupus erythematosus, tuberculous ulcers of the skin, various other ulcers (including trophic ulcers) of the skin, fibrous stenosis of the œsophagus and the urethra, dermal leishmaniasis, scleroderma, psoriasis, eczema, peripheral neuritis, bronchial asthma, gastric and duodenal ulcers, inflammatory gynæcological diseases, decreased joint mobility following traumas, in delayed fracture consolidation, in spontaneous gangrene, gummous syphilis,

pellagra, epilepsy (especially traumatic), schizophrenia, leprosy, hypertension and certain diseases of children.

Discussion.—The discovery of 'biogenic stimulators,' especially as therapeutic agents, opens up a new line of approach in the treatment of various diseases. Their importance, especially in a poor country like ours, lies in the simplicity of the methods used for their extraction, their undoubted cheapness and wide range of therapeutic applicability. It appears that various Ayurvedic remedies, besides their special therapeutic actions, also develop the biogenic stimulators, at least to some extent due to their methods of preparation. Also the reputed therapeutic uses of the mud of the river Ganges (Ganga) may be explained by these factors.

There appears to be a great difference between the action of the biogenic stimulators and that of the antibiotics. While the latter exert their action only against invading micro-organisms without any direct beneficial effect on the host tissue, the former have no direct antagonistic action against the invading organisms but they act by fortifying the vitality of the host tissue. It is likely to be advantageous to combine the actions of both these agents in appropriate cases. Intensive administration of the biogenic stimulators may be risky in cases of acute infectious diseases or in malignant tumours where active pathological cell divisions are occurring at the cost of the host tissue, because of the risk of these pathological agents deriving additional strength from these nonspecific stimulators of vitality.

The principle of biogenic stimulators is also being applied to seeds according to Filatov, to adapt them to withstand adverse conditions like, drought etc.; to get better yields from poultry; and in various other beneficial ways. Hence it is a subject worthy of special attention and investigation.

The above article has been based on the lectures of Academician V.P. Filatov given in Moscow in 1953 to medical workers at the Central Lecture Hall of U.S.S.R. Society for the Dissemination of Political and Scientific knowledge.

My grateful thanks are due to the Superintendent, Chittaranjan Hospital for permitting me to publish this article.

DISCHARGE FROM THE NIPPLE

A discharge from the nipple means some form of mastopathy. At least 70% of patients with a blood-stained discharge from the nipple have either a duct papilloma or a frank carcinoma of the breast. A serosanguineous discharge associated with a definite tumor in the breast should be regarded as a breast neoplasm after the age of 30 years, and radical treatment is justified. It must not be thought that a serous discharge necessarily means innocency. Nipple discharge means that the doctor must be alerted to the presence of disease and highly suspicious of the presence of a neoplasm.–(*Medical Journal Australia*, October 1957 via *Curr. Med. Dig.*, Jan. '58).

HYPERTENSIVE RETINOPATHY

In hypertensive retinopathy or neuroretinopathy there is a generalized contraction or narrowing of the retinal arterioles. Thickening of the arterial walls produces compression of the veins at the arteriovenous crossing. Peripheral to this, the veins become dilated and tortuous. Flame-shaped retinal hæmorrhages and retinal œdema are among the complications. The nerve head swells, and the edges of the disc become blurred. Frequently a star-shaped white macular lesion is observed. The swelling of the nerve head may be so marked as to resemble papillœdema. At this stage vision is impaired. Hypertensive retinopathy is usually associated with essential hypertension. With early medical or surgical treatment hypertensive retinopathy can regress without leaving marked changes in the calibre of the arteries or permanent retinal damage.

Treatment is usually directed toward reducing nervous tension. Stimulants, including nicotine, which increase cholesterol, should be avoided by the patient. Therefore, sedatives such as phenobarbital, which reduce cholesterol and which may retard the development of atherosclerosis, should be prescribed. Administration of vitamin C in daily doses from 0·5 to 1·0 mg. may increase the rate of oxidation and stimulate the liver, thereby accelerating the reduction of cholesterol and its elimination. Certain patients have benefited from sympathectomy, but with the drugs available to control the hyperactivity of the sympathetic system most authorities consider that surgery should be avoided. Marquardt and Page and Taylor claim to have had excellent results in advanced hypertensive retinopathy with a nonprotein bacterial pyrogen (Pyromen), which produces fever with much less discomfort than other foreign proteins.—(*N. Y. St. J. Med.*, *57* : 24, 1958).

EXPERIENCE IN CORNEO-SCLERAL TREPHINING FOR GLAUCOMA

Corneo-scleral trephining was done in 28 eyes with glaucoma. Based on the classification by Barken, etc., we had the following types: wide or open angle or non-iris block or chronic simple ; narrow angle, or iris block or angle closure or congestive ; two congenital buphthalmic ; two absolute ; and one post-keratoplasty glaucomas. According to Berens, the statistical evaluation of operations for glaucoma are of value when the data contain (1) control of tension within normal limits with or without the use of miotics, (2) increase of preservation of the pre-operative visual fields and vision post-operatively, and (3) evaluation of immediate and long range post-operative complications. Our data in hand satisfactorily cover up the first two, with at least 6 months follow-up in most of the cases. With no major early or late complication so far, our cases may be considered as successful. However, more cases with long range follow-up and comparative statistical analysis with the other kinds of operation will have to follow in order to postulate a significant conclusion.—(*Philippine J. Ophth. and Otolaryng.*, *7* : 23, 1956 via *E.N.T. Monthly*).

PAIN AS A SYMPTOM OF BREAST CANCER

Most neoplastic tumours of the breast are painless in the first instance. There is usually a complaint of some discomfort after the patient has noticed a lump, but often the patient is reassured by the absence of pain. Lewison puts the matter nicely : "Patients must be taught never to neglect a lump in the breast merely because it is painless, doctors must be taught never to regard a lump in the breast as benign merely because it is painful." Approximately 20% of patients with a carcinoma of the breast have noticeable pain when presenting to the physician.—(*Med. Jour. Australia*, Oct. 1957, via *Current Medical Digest*, July 1958).

SINGLE DOSE THERAPY IN TROPICAL EOSINOPHILIA

Further Studies

M. VISWANATHAN, M.D.,
Honorary Physician, Stanley Hospital,
AND
M. KRISHNAMOORTHY, M.B., B.S.,
Post-graduate Student in Medicine, Stanley Medical College, Madras

WHILE we were studying the effect of oral Diethyl-Carbamazine citrate in tropical eosinophilia[1], we were impressed with the possibility of an injectable preparation and in conjunction with the Unichem Laboratories, a single dose treatment was evolved. Preliminary trials were made last year and the results were summarized in a paper read by one of us M.V., (the senior author) at the Physicians' Conference held at Trivandrum in January 1958*[2]. The present paper is the result of further studies along the same lines.

Material and methods.—A series of 60 cases of tropical eosinophilia were treated with the injectable preparation D.E.C. to which a small amount of local anæsthetic and antihistaminic were added (*Uni-Carbazan:* Unichem Laboratories). We have adhered to the same criteria for diagnosis as in our previous study *viz.*, the presence of pulmonary signs and symptoms of eosinophilia with an absolute eosinophil count of more than 2000/cmm. The duration of the disease among the cases studied varied from two weeks to eight months. Six of them had more than one attack in the previous years, which had been treated by arsenic or other remedies.

This study did not disclose any further information regarding the ætiology or clinical features of the disease other than those mentioned in our previous two papers.

Dosage:—The first 30 cases were given 800 mg. of Uni-Carbazan (contained in 2 cc.) as a single intramuscular injection. The other 30 were given the same amount in two divided doses on consecutive days.

Results:—The present series confirms our results regarding the efficacy of this method of treatment, presented in our preliminary studies.

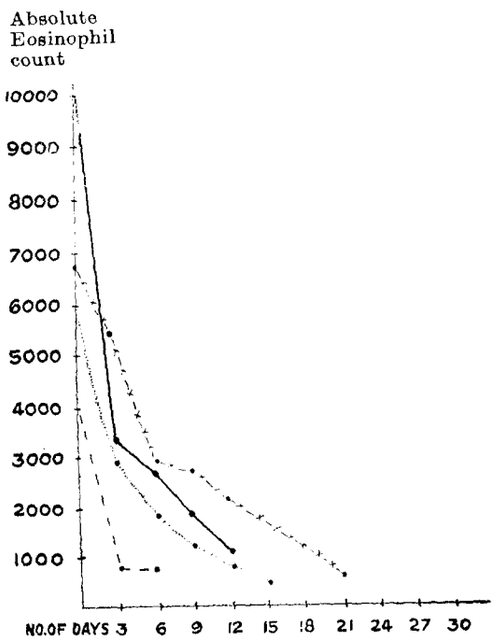
In 41 of the 60 cases thus treated, clinical and hæmatological response started within 2 to 4 days and was complete by the end of 10 days. Another thirteen showed a slower, but definite response which was complete by the end of three weeks. The other six in whom there was not sufficient response, were given another cc. of the drug, and of these, four showed complete hæmatological and clinical response within the period of

*Paper read at the 1958 Joint Conference of the Association of Physicians of India, (Awaiting Publication).

observation, *viz.*, one month. Thus all except 2 out of 60 cases 96·7% have responded to this method of treatment. One patient showed symptomatic response within a week, but the eosinophil count did not come down even at the end of one month. The other patient failed to show any response to Uni-Carbazan. This case was interesting because the patient presented himself as a case of status asthmaticus. The absolute eosinophil count was 9000/cmm. He had to be given corticosteroids to get over the severe symptoms. He did not show any response to Uni-Carbazan; oral treatment with Diethyl-Carbamazine was then tried and found to be equally ineffective. Finally he responded to a course of mapharside injections.

CHART I

Typical responses to 800 mgms. of Unicarbazan



The response in some of the cases are illustrated in Charts I and II.

As already mentioned, the first 30 patients were given the treatment in one dose. The results were quite satisfactory (see *Table I*, alongside) but it was noted that almost all the patients complained of severe nausea, and occasionally of intensification of the wheezing which lasted for a few hours. A few complained of giddiness. In our previous study, the only complications noted were the transient intensification of the symptoms and the occurrence of joint pains. Evidently, the nausea and giddiness are to be explained as the result of the presence of the antihistaminic, which has been added to the preparation used in the present series. To avoid these side-effects, it was decided to give the same amount in two instalments on consecutive days. The second half of

TABLE I

Group Treated with 800 mg. as one injection

NUMBER OF CASES : 30

	10 days	2 weeks	After 2nd injection	Failure
Symptomatic relief	26	2	2	—
Hæmatological response	20	7	2	1

the series received one cc. of the drug on two consecutive days. The side-effects mentioned above were not noted in this series and the results were equally good as shown in *Table II*, alongside :—

TABLE II

Group treated with 800 mg. in divided doses

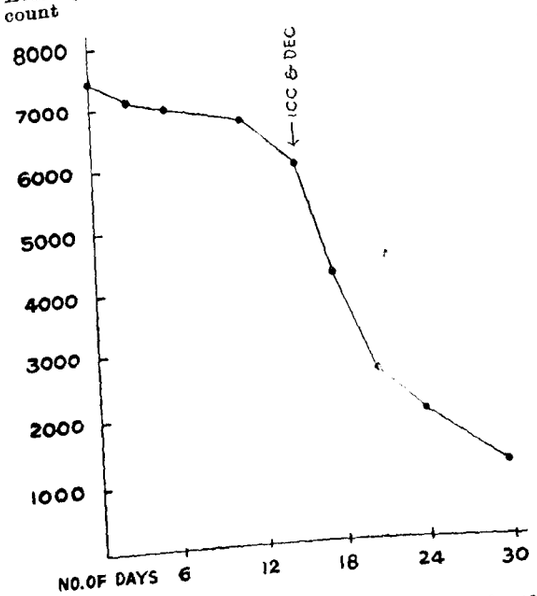
NUMBER OF CASES : 30

	10 days	2 weeks	After 2nd injection	Failure
Symptomatic relief	22	5	2	1
Hæmatological response	19	6	4	1

An interesting observation was made during the course of this study. It was noted that some of the patients passed round worms in their motion, the day after the injection was given. We are at present investigating the possibility of an injectable piperazine preparation for the treatment of ascariasis, where oral therapy is not practicable.

CHART II

A case which responded satisfactorily only after a second injection of 400 mgms.



Conclusion.—Our studies during the last two years on Tropical eosinophilia have convinced us that diethyl-carbamazine is the drug of choice in its treatment. Parenteral treatment has a definite advantage because of its shorter duration and quicker response; and so it may be claimed as a definite advance in the therapy of the disease.

Summary.—(1) This paper is a continuation of our previous studies on single dose therapy; (2) 60 patients were treated with parenteral diethylcarbamazine citrate (*Uni-carbazan*) and the results were recorded; (3) 800 mg. of Uni-carbazan were given as a single injection in 30 cases, and the same dose in two injections on consecutive days in the other thirty; (4) in both groups, the results were identical, the percentage of cures being 87. Another 400 mg. given at the end of 3 weeks raised the percentage of cures to 97. (5) It was found that the nausea and vomiting which were noted with this form of therapy, could be avoided by giving the treatment as two injections.

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HERPES ZOSTER*

Observations on its Aetiology, Symptomatology and Treatment

NABIN KISHORE BIDYADHAR, M B., B.S., F.I.C S.,
Civil Surgeon, Koraput (Orissa)

THE present communication will deal briefly with the ætiology, symptomatology and treatment of Herpes Zoster.

Aetiology and pathology.—Herpes Zoster is a term derived from a Greek word meaning belt referring to the typically characteristic distribution of the associated cutaneous eruptions; it is clinicopathologically better known as acute posterior ganglionitis; otherwise known also as—Shingles (derived from the Latin *cingulum* meaning girdle). Aetiologically it is an acute virus infection—characterized by selective inflammation of the dorsal root ganglia of one or more spinal nerves or the extramedullary cranial ganglion of one of the cranial nerves. Of the nerves most commonly subject to this virus invasion, are the second thoracic through the second lumbar nerves and the trigeminal or fifth cranial nerve. Mostly the first division of the fifth cranial nerve is involved, thereby attacking the eyeball producing serious ocular lesions. The disease generally manifests itself externally by a segmental neuralgia associated with a scattering of small vesicles localized alongside the peripheral—distribution by the affected nerve. Eruptions of vesicles in unilateral segmental distribution is characteristic of this condition.

The virus is believed to be related to that of varicella. It has long been recognized that herpes-zoster in the adult may follow contact with a case of chickenpox in a child. These findings provide good reason to believe that the same virus is responsible for both the conditions.

Herpes zoster is also known to follow an irritation of the dorsal root ganglion as from a lumbar puncture, luetic infections or even the use of arsenicals. It is also reported to occur when the nerve is put under pressure as by a neoplastic growth or has been infiltrated by leukæmia or Hodgkin's disease or other reticuloses. Presumably due to the occurrence of these secondary symptomatic types of herpes-zoster, it has been assumed that the virus can remain latent indefinitely in the body until some local irritation provides the stimulus for activation and proliferation.

Histopathologically one would find intra-epidermal, mostly unilocular vesicles, with swollen, degenerated epidermal cells and an underlying inflammatory infiltrate proceeding on to necrosis.

Clinical features.—The characteristic features are:—slight fever associated with malaise and hyperæsthesia, usually well

* Paper read at the 3rd Clinical Conference of the Koraput Dt. Branch of I.M.A.

marked in the affected area. The main complaint of the patient is a burning sensation in the area with a stabbing pain experienced in the affected side of the body. The intensity of pain is generally greater in old and debilitated and devitalized patients. Several days after the prodromal symptoms of fever and malaise, typically unilateral and segmental eruptions manifest themselves alongside the course of a sensory nerve. Numerous clusters of large and small clear vesicles symmetrically interposed on an erythematous base make their appearance along the affected segment. These dermal lesions gradually dry up in a few days becoming encrusted, generally in one to 3 weeks. An acute tenderness of the involved skin remains and often persists in some cases. In severe involvement of herpetic infections the vesicles may turn hæmorrhagic or may become secondarily infected producing untoward results. In aged patients particularly, the eruptions generally become widespread with a persistent neuralgia for several months after the disappearance of the skin lesions. The neuralgic troubles become so resistant to all therapy including surgical nerve-block that the unfortunate victims become incapacitated and dejected. Among the worst complications of herpes-zoster is the involvement of the ophthalmic division of the fifth nerve, leading in its train to iritis, keratitis, corneal ulceration, secondary glaucoma and optic atrophy.

DIAGNOSIS:—Difficulty is usually experienced in clinching the diagnosis before the manifestation of eruptions. A girdling pain about the chest region may suggest pleurisy or pleurodynia at times. Constricting or stabbing pains about the left nipple area may suggest cardiac syndromes.

COURSE AND PROGNOSIS:—The course of this terrible affection proceeds through its various stages ending as usual with scarring in proportion to the virulence of the tissue involved and the intensity of secondary infection in about 2 to 3 weeks. Second attacks are not common. I have however, seen a case with a second attack. The prognosis regarding post-herpetic neuralgia varies in direct proportion to the age of the patient and his resistance.

TREATMENT:—*Acute stage*:—Rest in bed, sedatives and plenty of fluids are essential.

There is no specific treatment yet for this condition. Among the therapeutic measures one has to look to the control and sedation of neuralgic pain and the prevention of secondary infection. While mild involvements would readily respond to analgesics and sedatives and local sedative applications, severe cases do not respond to them. The specific measures usually employed to control the severe pain are:—

Administration of thiamin, vitamin B_{12}, roentgen-ray-therapy and in some refractory cases autohæmotherapy. These

are reported to have produced good results. The daily injection of pituitrin intramuscularly yields dramatic results in early cases. Morphia is necessary in severe involvements by herpetic neuralgia. Recent trials show that adrenocortical steriods and corticotrophin afford prompt relief of pain in very acute cases. The efficacy of hormone therapy in this affection has not however, been properly evaluated.

The patient should invariably rest in an equable temperature and have a bland application. Occlusive applications encourage maceration of tissues and their invasion by bacteria.

The topical use of calamine lotion and anæsthetic ointments and powders is usually soothing and palliative; the local application of antibiotics will control secondary infections. Irradiation of the involved ganglia provides great relief when herpes zoster is associated with carcinoma, anæmia, leukæmia and Hodgkins disease. The therapeutic efficacy of the broad spectrum antibiotics, like aureomycin remains to be evaluated. For ocular manifestations homatropine has to be instilled and antibiotics used locally to control or prevent secondary sepsis. Post-herpetic neuralgia is most common in elderly patients being severer in proportion to the patient's age, the pain developing in its full intensity as the eruptions resolve and persisting long after the cutaneous manifestations have resulted in scar-formation. The treatment for such conditions remains a trying problem for the physician.

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PENICILLIN THERAPY IN TREATMENT OF ULCER DISEASE

Drs. O. L. Gordon, G. F. Markova, V. A. Oleneva and P. D. Tarnopolskaya report on penicillin therapy of complicated, intractable gastric and duodenal ulceration in 67 men and 33 women, with involvement of the stomach in 30 patients and of the duodenum in 61 and with gastroduodenal ulceration in 9. Eighty-two patients had had symptoms for more than 6 years and 45 of these for more than 10 years. The authors recommend intramuscular injection of 200,000 to 300,000 units of penicillin 2 to 3 times daily, the total being 6 to 10 million units for a course of treatment. X-ray studies demonstrated a niche before the treatment in 36 patients with gastric ulcer and in 47 patients with duodenal ulcer. Under the influence of penicillin therapy the niche disappeared in 48 patients, was hardly recognizable in 17, and diminished in 9. The authors consider penicillin therapy as a valuable ancillary method of treating ulcers in complicated cases.—(*Klin. Med.*, *36* : 22-26, Feb. '58, Moscow, via *J.A.M.A.*, *1279* : July 5, 1958).

TWO CASES OF RUPTURED SPLEEN

M. C. DEKA, M.B., B.S.,
Assistant Surgeon, Civil Hospital, Gauhati

Introduction:—Traumatic hæmoperitoneum on account of injury to abdominal viscera, like the spleen is common. It can produce severe shock and endanger life; recovery from it depends on prompt recognition and intervention.

Case reports.—Case 1:—A Hindu boy, aged 15 years was admitted to the Civil Hospital, Gauhati at 5 p.m. on 19-4-'58 in a semi-conscious state with a history of a fall from a tree from a height of 20 feet, about 24 hours before; his abdomen came in violent contact with the ground on his right side. He was unconscious and in a greatly shocked condition immediately after the injury. After about 6 hours he regained consciousness, and vomited several times; resuscitative measures were started immediately on his reaching the hospital. He complained of severe acute pain all over his abdomen. There was an area of abrasion 2" x 2" over the upper abdomen on the right side.

On examination:—The boy was of average build, and was in severe shock. He was anæmic (Hb. 25%), the radial pulse imperceptible, the carotid pulse was 140, and the respiration rate was 50 per minute; the temperature was 95·6°F. The blood-pressure was 40 mm. of Hg. systolic; diastolic could not be recorded. Pupils were normal, and equal on both sides, circular, central, reacting to light. Tongue-dry; abdomen was not moving with respiration. There was tenderness and muscle guarding all over the abdomen, dullness present in both flanks. There was no loss of liver dullness. Intestinal peristalsis was absent. Rectal examination revealed no tenderness.

Provisional diagnosis of intraperitoneal rupture of abdominal viscera and hæmoperitoneum was made and immediate laparotomy was decided upon.

Operation notes:—Under ½% Novocaine infiltration, through a midline incision the abdomen was opened The peritoneal cavity contained about 1½ pints of dark coloured blood, which was sucked out. All the intraperitoneal abdominal viscera were carefully scrutinized and the spleen was found compressed and lacerated on the visceral surface. The hilum of the spleen was badly injured. Splenectomy was performed. The abdomen was closed after a thorough toilet. The spleen was normal in size shape and consistency, but it was torn into 9 pieces, of unequal sizes.

The post-operative period was uneventful, except for some fever for the first 3 days ranging between 99°F and 102°F. Penicillin was given for 8 days during this period. He had a transfusion

of blood (250 cc.) 14 hours *after* the operation as no donor was available *before* the operation.

Case 2 :—A Hindu boy, aged 16 years was admitted to the Civil Hospital, Gauhati at 4-30 p.m. on 11-8-'58 in a pulseless condition with a history of a motor accident–a bus dashed against him on the right side of his lower chest and right scapular region. He was unconscious and in a greatly shocked condition immediately after the injury. Resuscitative measures were started and he was conscious for about an hour. He complained of severe acute pain over the abdomen. There were minute abrasions over the right side of the abdomen, scapular region, fingers, knee and toes.

On examination :—A boy of average build was in extreme shock. He was anæmic (Hb. 20%), radial pulse imperceptible carotid pulse 160/p.m. Respiration rate was 46/p.m. Temperature was 96°F. Blood-pressure 70 mm. of Hg. Pupils normal, circular, central, equal on both sides, reacting to light. Tongue dry, abdomen not moving with respiration, upper abdomen distended moderately. There was tenderness all over the abdomen, muscle guarding prominent on the left side of the abdomen ; shifting dullness present, also liver dullness ; intestinal peristalsis absent. Rectal examination revealed no tenderness.

No injury detected in the lungs or chest wall except some minute abrasions over the right side of the loin and scapular region. A provisional diagnosis of intraperitoneal rupture of the abdominal viscera and hæmoperitoneum was made and immediate laparotomy was decided upon.

Operation notes :—Under 1% novocain infiltration, through a midline incision the abdomen was opened. The peritoneal cavity was full of dark-coloured blood. About 1 pint of it was sucked out, some clots were also removed. All the intraperitoneal abdominal viscera were inspected ; the spleen was lacerated on the visceral surface. There was a hæmatoma under the peritoneal covering of the upper pole of the left kidney and the stomach was enormously distended. The midline incision was extended transversely towards the left below the costal margin. Splenectomy was performed. The abdomen was closed after a thorough toilet. Spleen was normal in consistency and size, it was torn into 3 pieces of unequal size.

Post-operative regime was uneventful except for some fever for 4 days at first ranging between 99°F to 103°F. Penicillin was administered for 5 days. No blood-transfusion could be done.

Comments.–The notable features in both cases were that the external injuries were on the right side of the abdomen and the injuries of the viscera were on the left side. This demonstrates that a centre coup effect may occur in abdominal organs also. It is a matter of interest, but I draw no conclusion from it.

Acknowledgement.—My thanks are due to Dr. S. K. Chakravarti, Civil Surgeon, Kamrup, Gauhati for his kind permission to report these cases. My thanks are also due to Dr. S. P. Bhattacharjee and Dr. K. C. Dutta for their invaluable help.

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TROPICAL EOSINOPHILIA TREATED WITH HETRAZAN

K. M. GOPI KURUP, B.Sc., M.B., B.S.,
Civil Assistant Surgeon, Ambalavayal (Kerala State)

Recently a number of articles on Tropical Eosinophilia and its treatment have appeared in the Antiseptic. This disease accounts for a good percentage of patients with respiratory infections attending the outpatient department of all hospitals, but very often the diagnosis is missed and unnecessary antibiotic treatment instituted with no benefit to the patient, when a prompt examination of the blood would have given the clue to correct diagnosis.

I am myself a sufferer from Tropical eosinophilia. My first attack was when I was a student in the B.Sc. classes at Mangalore. One day I suddenly developed cough which was dry to start with, but later on became productive. The cough was most distressing at nights with severe wheezing and I was hardly able to sleep for more than a couple of hours. I was also having occasional rises in temperature. I consulted a doctor, who examined me thoroughly and gave me sulpha drugs, penicillin, and some cough syrup. Having no relief I went home and consulted the local doctor, who also gave me the same treatment at the beginning, but when he found that I was not at all improving he gave me Acetylarsan injections once in 5 days. After the third injection I had some relief and I was completely cured after taking six acetylarsan injections. A blood count was not done at any stage.

My next attack was when I was a medical student in the III year. This time a blood examination was done. The total W.B.C. was 2,80,000 and the D.C. showed 80% eosinophils. I was put on Mapharside dissolved in glucose with Vitamin C intravenously. I got good relief after the second injection, but I could take only four injections, as during the fourth injection a few drops of the solution got extravasated into the tissues and I had to be treated for the swelling and pain caused thereby and the

arm had to be in a sling for two weeks. So I discontinued the treatment after the 4th injection. But all the same I was completely cured.

The third attack was after a period of two years when I was a House Surgeon in the General Hospital at Madras. This time the blood count was 20,000 and D.C. showed 60% eosinophils. I was advised not to take arsenic as I had had arsenic therapy during two previous attacks; I was put on sulpha drugs, antihistamines and anti-asthmatic drugs for about a month. As all the anti-histamines are soporifics I could get some sleep and the antiasthmatic drugs gave me very transient relief. But as soon as the drugs were discontinued, the trouble started again, with severe cough, wheezing and sleepless nights. The conservative line of therapy was not of much use in my case and I had to resort to arsenic again. I was given carbarsone tablets one *b. d.* for 12 days. The improvement was dramatic, but then I was thinking what medicine I should take in case I got a 4th attack some time later. Luckily for me arsenic therapy did not produce even a mild reaction.

I had the trouble again, two years later when I was Assistant Surgeon in Mannarghat. The same chain of symptoms appeared and I got my blood examined. The eosinophil percentage was only 50%. An examination of my stools showed hook-worm and pin-worm ova. I was dewormed twice, my bowels were rid of the worms but the Eosinophilia persisted. I tried Hetrazan tablets (50 mg.) 2 tablets t.d.s. for a week. On the third day the symptoms disappeared and after two weeks my blood showed a very marked reduction in Eosinophils almost to the normal value. Since then I have been only prescribing Hetrazan tablets to my patients suffering from tropical eosinophilia. They have all shown excellent response without the side-effects of arsenic.

The ætiology of this disease still remains obscure. Intestinal parasitic infestations were incriminated at one time because such associated infections were found in some patients with Tropical eosinophilia. But treatment against worms had not brought down the Eosinophil count. Again some thought that this disease only occurred in coastal regions. But cases have been reported from interior places like Madhya Pradesh, far away from the sea. Some believe that this disease dies of its own accord after the third or the 4th attack. I suffered from Tropical eosinophilia 4 times so far and I am now regularly checking my blood once every six months. It is nearly two years since I had my last attack, and so far the blood examination has not showed any tendency to eosinophil increase.

It would be interesting to know the experience of other sufferers in the profession.

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Editorials

THE CHILDREN'S ACT OF 1958

It will be remembered that in response to a persistent agitation by social welfare agencies and individual welfare workers, the Madras State Government appointed a Committee in 1955 to examine not only the original Madras Act but the draft Madras Children Bill of 1950 and the Central Children Bill of 1953 and suggest modifications of existing law. The Act of 1920 provided for the custody, trial and punishment of youthful offenders and for the protection of children and young persons. In accordance with the recommendations of the Committee, the new Bill lays stress on reformation rather than on mere punishment. It seeks to provide for the custody, trial, maintenance, welfare, education and character-training of youthful offenders and the care, protection, maintenance, welfare, education and character-training of children and young persons who are uncontrollable, or are in moral danger, or destitute, or in need of care and protection.

The amending Bill came up for discussion in the Madras Legislature in September 1958 and was ultimately passed by both the Houses of Legislature. A change of attitude towards the problem of juvenile offenders is certainly manifest in the New Act and this new approach is more humane as it recognizes that children should be re-educated rather than punished when they have fallen into bad unsocial ways. The Constitution no doubt provides that children, and youth shall be protected against exploitation and moral and material abandonment. Yet there has been an increase in the number of juveniles who are homeless or have been deserted by their parents. They beg in public places, are used by criminals in the commission of

thefts, or are exposed to other evils, including prostitution. Existing social welfare institutions, established by the State, or by voluntary agencies, are insufficient to provide for such helpless children; and it has become necessary not only to expand those services but also to make similar arrangements in the homes of philanthrophic people or of relations of the destitute or abandoned children. Advances in both directions are envisaged in the new Act now passed by the Madras Legislature amending the Children Act of 1920.

The Act empowers a magistrate to commit a youthful offender to the "custody" of any suitable person, whether a relative or not, who is willing to undertake his or her care. As this provision does not seem to have been applied or availed of widely enough, it is liberalized in the amended Act. New rules will, of course, have to be framed to carry out the object of the present legislation, and it will be useful to base them on the system obtaining under the British Children Act. To help the authorities to board out children with foster parents, that Act offers an allowance to cover the cost of maintenance. If such means are adopted more widely in Madras and other States, it should be possible to induce more people who are sympathetic, but not very affluent, to undertake the care of destitute children.

Probably because of financial stringency, the new Act does not really increase the number of the State institutions which now take care of young delinquents—though the after-care facilities are to be regularized and more probation officers will perhaps be appointed. This is rather disappointing in view of the fact that the number of Certified Schools (to be henceforth called "*Approved Schools*" as in Britain) is insufficient and there is a real need for more institutions of different types. Social workers who know what they are about, have suggested that there must be a separation of different classes of children who need care and guidance. Destitutes and orphans should be maintained in institutions separate from young offenders and girls who have been found in brothels should go to Rescue Homes.

Those children who are found to be mentally or physically defective should have separate treatment in schools run by trained psychiatrists and specialists in these fields. The Remand Homes where children are kept pending the decision of the Juvenile Courts should be made attractive and craft-training provided so that idleness does not generate mischief. Again, many of the children require ordinary medical treatment and it is unwise to let sick children mix with and infect the healthier inmates.

Under the British Children's Act where a foster home cannot be found, a child may be placed in a children's home managed by a local authority or a voluntary organization; and

many children's homes are provided in small houses, where a group of ten or fewer children live in the care of a house-mother or house parents. Such small houses resembling the homes of common families are preferred by numerous children, and they are, therefore, needed also in all States in India, in addition to the bigger hostels or orphanages. Local authorities in the United Kingdom are also required to make inquiries where it is reported that any children living with their parents or guardians need special care or protection; and they are asked to appoint committees to co-ordinate their own and voluntary services dealing with unsatisfactory families. A corresponding provision in the Madras enactment should be introduced as soon as possible. The reform of ignorant and careless parents by judicious, tactful and unobtrusive advice and assistance by social workers is one of the greatest needs of slum-dwellers and similar sections in the towns in India.

All this will certainly entail more expenditure, more staff, more buildings and equipment and it is obvious from a glance at the Financial Memorandum attached to the Bill and from the Treasury Bench remarks during discussions in both Houses that the Government are reluctant to embark on schemes involving any sizeable expenditure. For the Government obviously does not want to forget the possible implication that the average rate-payer spread over the whole State in its villages and struggling for the simplest amenities of life, should remain complacent over the amount of money diverted to the provision of streamlined social psychology for the reclamation of city delinquents. It is true that in the existing state of affairs even the bare medical needs of the people have hardly been met, and the law is scarcely able to provide even certain elementary hygienic amenities affecting large masses of people in rural areas who constitute 80% of the entire population of India.

As the Government cannot face new heavy expenditure, they should at least plan for a liberal extension of these social services for the future. Money will be forthcoming both from the public and the Central Government if detailed schemes are carefully worked out and the plans are submitted in good time.

There was some discussion in the Madras Legislative Council of the causes of '*Juvenile Crime*' and the best means of controlling it. It is usual to attribute anti-social conduct to poverty and a slum environment. We should note, however, that the incidence of juvenile crime is probably greatest in the United States, which also happens to be the most prosperous country in the world. A more plausible correlation seems to be the growth of urban life with all its many diversions and modern attractions like theatres, cinemas. etc., though villages do have their share of unruly youngsters and petty crime. But in the village, the

smallness of the community places a check on the young and the force of social disapproval is more easily felt. In the joint-family, the child has a multiplicity of guardians and the discipline of rural life is not heavy. When the "nuclear family" emigrates to the towns, the parents do not realize that children cannot be left to their own devices and that the sole element of discipline is the parental one.

The question of "*Juvenile Smoking*" was raised in the Madras Legislature during the discussions on the amending Bill. It is a problem which has caused concern in most countries, and many have been the endeavours to discourage it, with varying success. The only effective way to prevent it would, of course, be a total ban on smoking; but that is not feasible, and even if it was attempted would undoubtedly lead to much evasion and recourse to subterfuges on a much larger scale than the attempts at evading prohibition. One of the first necessary steps is to make it difficult, if not impossible, for children to buy cigarettes and tobacco. Sales of these, being controlled by licence, should not be permitted to children under the age of fifteen or sixteen. That could be a first practical step, which would stop a practice now widely indulged. Then should come an effective ban on the employment of children in the preparation and sale of cigarettes and such like. But the final responsibility, as the Minister said, rests with parents who should be made to realize the injurious effects smoking can have on the health of juveniles. There have been extensive investigations recently into the relation of smoking to lung cancer, heart diseases and digestive disturbances. Juvenile smoking may perhaps be a contributory factor and therefore, it will be worth while extending the investigations to this aspect of the problem.

EMPLOYEES' STATE INSURANCE

(Progress made and plans for extension)

Addressing a meeting of the Employees' State Insurance Corporation at New Delhi recently. Shri Gulzarilal Nanda, the Union Minister for Labour and Employment, regretted that though most of the State Governments had agreed to the extension of medical care to families of insured persons, the arrangements had not proceeded as expeditiously as one would have liked. The result was that the Corporation had no alternative but to go ahead with such States as had taken positive steps in that direction. The honour of being the first to take "this enlightened step" goes to Mysore, which has brought in the families along with the introduction of the scheme in Bangalore on the 27th July 1958. They have no doubt made a small beginning in family medical care, but it is still a matter to be proud of.

It will be remembered that the E.S.I. Scheme itself was implemented not very long ago, only in two centres, Delhi and Kanpur and only a lakh and twenty thousand workers were covered. Since then the Corporation has been able to cover over 13 lakhs of employees. We are told that they have been trying their best to further extend the scope of benefits provided under the Act so far as that is possible within its framework. They have accordingly granted extended cash-benefits for insured persons suffering from T.B. They have also agreed to provide artificial limbs to insured persons who lose them either because of an employment injury or otherwise.

In Kerala State about 4,000 more factory employees will get the benefits of the Employees' State Insurance scheme when it is extended to Trivandrum from the midnight of August 30, 1958. With this extension, the scheme will be in force at six centres in that State, covering about 34,000 employees.

Factory employers in Trivandrum have so far been paying ¾ per cent of the total wage bill as employers' special contribution under the scheme. With the extension of the scheme to Trivandrum now, they will be required to pay special contribution at the rate of 1¼ per cent of the total wage bill.

On the medical side they have raised the standard of medical care from mere out-door treatment and domiciliary visits to almost complete medical care, including hospitalization and specialist services costing Rs. 16 per head, against the original modest provision of Rs. 6 per head. When families start getting medical care, their cost is estimated to go up to Rs. 40 per family-unit.

If the proposal to increase the rate of maternity benefit was agreed to, it would constitute another milestone on the road to better benefits for industrial workers. One of the points in which considerable attention has been paid lately is the Central Government's intention to raise the rates of employers' special contribution. Though that intention was notified over a year ago, the Central Government has not taken any action so far. But as medical care has now been extended to families in Bangalore and will probably be soon extended in other places, the matter needs urgent consideration. It has been reccommended by the Standing Committee of the Corporation that they should go all out to extend medical care to the families of insured persons and that so long as the current revenues of the Corporation were adequate to meet the increased cost, the rates of employers' special contribution might be left undisturbed, but the rates will have to be revised as soon as there is pressing need for additional funds. The burden of extension of medical care to families should not be allowed to fall on the accumulated reserves of the Corporation.

The Union Labour Minister had occasion in his address, to stress the need to educate workers about their rights and obligations under the scheme and in the methods of claiming benefits; he would even go a little further and consider a programme designed to awaken the health consciousness of the working class. They had so far confined their activities to the provision of curative medicine. The preventive aspects of disease should no longer be ignored. They would render a useful service to the workers if they could make them aware of the health hazards in the working environment, bring home to them simple precautions which they could take and some healthy habits they could cultivate in their homes.

In this context, it is proper to refer to the observations made by Shri Dr. U. Krishna Rau, Speaker of the Madras Legislative Assembly, while inaugurating the All-India Employees' State Insurance Corporation in Madras City early in July last. Dr. U. Krishna Rau, who was State Minister for Industries, Labour and Transport in a previous Ministry, had some very good and practical advice to give to the members of E.S.I.C. when he stressed the importance of organizing trade unions on healthy lines, and impressed on his hearers that the employees of the State Insurance Corporation had a special responsibility for it was based on their willing work and service that the social security measure underlying the whole scheme could be successfully implemented, and its benefits enjoyed by the vast numbers of workmen throughout the country. He advised the workers to make "reasonable" demands—and especially to avoid pitching them too high. In trying to improve their conditions, they should aim at a gradual, step-by-step advance in preference to attempting a too rapid pace, which was bound to result in failure and embarrassment to all concerned.

ENVIRONMENTAL SANITATION IN SOUTH-EAST ASIA

(W.H.O. Plans to meet the overwhelming requirements)

Pressing problems relating to environmental sanitation in South-East Asia were discussed at length by the Regional Committee of the WHO for South-East Asia during the Eleventh Annual Session held at Delhi during the week ended 30th September 1958. Inaugurating this session, at which 40 representatives from nine countries besides other U. N. specialized agencies participated, India's Vice-President Shri Dr. S. Radhakrishnan praised the role of the WHO in the South-East Asian countries which were under-developed and under-nourished. This is an age of anxiety and it was but natural that the

Vice-President as well as the other speakers laid much stress on rural and mental health, and the need for a renovation of human nature.

Dr. Radhakrishnan observed that "one cannot say that the advanced nations which did not suffer from diseases of the body, were not afflicted by diseases characteristic of abundance and wealth. In the recent times, a great many philosophers and thinkers, including Prof. Toynbee, had said that unless there was change of human nature, the world would not be able to avoid a catastrophe.

"These thinkers brought to one's mind the ardent insistence on the transformation of human nature for the attainment of what was called the mental health which meant equilibrium, compassion, serenity, and which redeemed the suffering world from the sense of insecurity of modern technological civilization, and brought real freedom to the human being."

Among the projects in which WHO is interested is the All-India Institute of Mental Health in Bangalore. The mysterious working of the human mind is being studied carefully and our knowledge of it is increasing slowly. As regards rural health, Shri D. P. Karmarkar, the Union Minister of Health, was right in pointing out that, by and large, the problems of health in this country were really problems of rural health. It is claimed that "individual rural health projects have made considerable progress in India through the community development programme. Both the programmes of improved environmental sanitation and an adequate number of properly staffed rural health centres including material and child welfare services had been given top priority. About 3,000 primary health centres would be set up by 1961. Of these, over 1,200 were already being built." We are glad to know that the people of the South-East Asian countries have begun to insist upon modern public health services. This consciousness is a valuable asset and should serve as an incentive to the various Governments to give better and more comprehensive services to their people. The WHO helps people and Governments to help themselves.

Most of these projects start off no doubt with tremendous initial enthusiasm; but staying power is much more important for success in achieving the desired goals. It is indeed somewhat disconcerting to learn from the survey report that a number of old projects "to which the WHO assistance has been terminated continue to show signs of deterioration mainly due to the gradual disappearance of local facilities and resources which had been forthcoming during the period of the WHO-aid." Sustained and continual effort is most important, particularly in view of the fact that the WHO programmes always seek to highlight the unending fight against communicable diseases and

the ever-present need for improving and extending the scope of maternal and child health services. These are essential for healthy progress and there can be no slackening of effort. Determined and continuous work may enable a country to eradicate a disease, as for instance, malaria which is likely to be eradicated in South-East Asia with the change of strategy from "control" to "eradication" which has been adopted by all countries.

The WHO's Regional Director Dr. C. Mani in his survey, reports that there was a slight set-back last year in the steady expansion of public health services which had been a feature of the past ten years in S.E. Asia and attributes it to a too-rapid progress, without the activities having enough time to grow roots. This factor should be kept in view while planning the future of public health in this country. The accent to-day is on proper public health standards and on preventive measures. The survey also notices the fact that money which has always been inadequate, had often to be spent upon brick and mortar, rather than upon adequate qualified staff. Shortage of personnel is described as "acute." This is indeed an urgent matter which should be tackled by all Governments in the region with a firm determination not to halt the steady and wonderful progress so far made.

The WHO can guide a Government, and help it with finance, but the proper and full execution of any programme must depend upon the Governments of the region. This year the WHO has undertaken financial responsibility for programmes to the tune of seven million dollars (about Rs. 3·5 crores) in the South-East Asian region. The WHO has done very fine work and has provided eloquent proof of the fact that all nations *can* co-operate so magnificently and well in all peace-time tasks that the benefits accruing therefrom can be shared by all the peoples of the world.

TUBERCULOUS MENINGITIS

G.D.W. McKendrick and R. J. Grose (*J. Neurol. Neurosurg. and Psychiat.*, August, 1957) discuss the treatment of tuberculous meningitis in 58 patients under their care between July, 1952, and April, 1954. These patients included some in coma, others with gross focal signs, with neurological signs, or with only slight or no meningeal signs. The mortality was related to the severity of the condition on admission to hospital. Of the whole group, 47 survived. The mortality in the group in coma or with gross focal signs was about 50%. They treated the patients with streptomycin intramuscularly and INH by mouth for a minimum period of six months, combined with streptomycin intrathecally for at least 28 days. They consider that intrathecal injections of streptomycin are still indicated in the treatment of these patients, although it is suggested that, with increasing experience, the period of intrathecal medication may safely be reduced to two weeks in certain cases.

Special Feature :

NEWSLETTER FROM THE UNITED STATES

It seems that human beings are not the only ones to develop arteriosclerosis. A high incidence of *arteriosclerosis in birds and mammals* that have died at the Philadelphia Zoo has been attributed not so much to ageing or diet as to social pressures caused by an increased animal population in the Zoo. Findings with captive wild birds and mammals, state H. L. Ratcliffe and M.T.I. Cronin in the July issue of *Circulation* (*18* : 41, 1958), suggest that arteriosclerosis reflects the interaction of several factors, not all of which are related to fat intake. Inactivity may be an important ætiologic fact or, particularly in animals caged alone. Higher incidence of arteriosclerosis has been found in the larger birds which are afforded little opportunity for anything like natural activity. The most striking increases in incidence during the 40-year study occurred after diets were improved.....Gall bladder disease in Egypt, once very common in the young as a result of enteric fever, is now seen much less often because of earlier and better *therapy of enteric fevers with Chloromycetin*, reports S. M. Talaat in the July issue of *The American Journal of Digestive Diseases*, (*3* : 522, 1958). Chloromycetin has also reduced to the point of negligibility complications and mortality associated with typhoid. These fevers, endemic in Egypt, assume epidemic form during the late spring each year. Better hygienic conditions in Egypt are reducing the burden of parasitic and tropical diseases, but such diseases of western civilization as peptic ulceration, neoplastic diseases, regional enteritis and ulcerative colitis are appearing to take their place.....N.G. Georgiade, speaking at the annual meeting of the American Medical Association in North Carolina, reported on a *new technique for preserving living eye tissue*. The method permits corneas to be preserved in solutions containing constituents of human blood at a temperature of 45 degrees below zero F. as long as 90 days. Dr. Georgiade hopes that soon the technique will be perfected so that corneas can be "banked" and available for immediate use at any time..... *Meat has been found to be a good dietary supplement* for premature infants, who often show marked iron deficiency in late infancy. According to T.R.C, Sisson and L. E. Whalen in the June issue of the *A.M.A. Journal of Diseases of Children*, (*95* : 626, 1958), meat seems to increase the red cell volume and the mass of circulating hæmoglobin. The study was carried out over a three-year period on 33 premature infants, 18 of whom were used as controls. The remaining 15 were fed strained liver, beef, pork, and lamb. Infants who received the meat supplement showed a rise in hæmoglobin concentration four to eight weeks sooner than the controls. The meat-fed infants generally maintained a higher level of hæmoglobin than the controls from the 10th week through the rest of the study.....*Trilafon has proved valuable as a tranquillizer given at the beginning of labour*, concludes W. B. Harer in a study of 250 women at term, reported in the March issue of *Obstetrics and Gynaecology*, (*11* : 273, 1958). Administration of the drug at that time resulted in calmer patients at admission, shorter labour and smoother first stage of labour, elimination or substantial reduction of all other analgesic and amnesic drugs, and a reduction in nursing care needed during labour. Dosage was one 8 mg. tablet of Trilafon taken when the patient left her home for the hospital. Good to excellent results were also obtained in about 60 per cent of another group of patients given Trilafon to control nausea and vomiting in early pregnancy. Trilafon and ammonium chloride combined gave better results in the treatment of premenstrual tension and dysmenorrhœa than the author had obtained with any other means of therapy. .....A new device making it possible for *heart specialists to do consultations over the telephone* is described by E. G. Dimond in the July 26 issue of *The Journal of the American Medical Association* (*167* : 1624, 1958). The

unit, weighing 5 pounds, is attached to the patient by standard lead wires and placed next to the mouthpiece of a telephone. At the receiving end of the phone, another unit picks up the information and carries it to any standard electrocardiograph machine.....*Poor appetite* during the toddler or preschool years is common and parents should not urge children to eat, warns H. Bakwin, speaking before the annual meeting of the Illinois State Medical Society. During the first year of life, an infant gains approximately 15 pounds and eats a comparatively large amount. For the next several years he gains only about five pounds per year, and his appetite decreases correspondingly. The decrease in appetite coincides with a spurt of mental and emotional development. Youngsters who are aware of parental concern over eating habits may make difficulties about eating in order to annoy their parents or gain parental attention and favours..... .....*Necrotic arachnidism* in Missouri, caused by the common house spider, *Loxosceles reclusus*, is strikingly similar to the cutaneous arachnidism or "mancha gangrenosa" caused by the South American spider *Loxosceles laeta*, state J. A. Atkins *et al* in the March issue of *The American Journal of Tropical Medicine and Hygiene* (7 : 165, 1958). The clinical picture is distinctive and quite unlike that due to the bite of a black widow spider. Severe local pain is generally followed by a systemic response and at times by a generalized scarlatiniform eruption. Necrosis and sloughing at the site of the bite form a deep ulcer, which slowly evolves and heals with scarring. In the authors' cases therapy was largely supportive and symptomatic,..... *Gout is much less rare* than is generally believed, C. W. Denko, of the University of Michigan Department of Internal Medicine, noted in a recent radio broadcast. According to a study made in the United States, 5 per cent of patients with arthritis have gouty arthritis. Exact aetiology is unknown, but the disorder seems hereditary and occurs 10 to 20 times more frequently in men than in women. Joints attacked are generally the knee, ankle, instep, heel, big toe. Therapy includes proper diet and administration of colchicine. With this treatment, patients usually experience relatively little handicap in following normal activity.....*Blood pressures taken during routine office visits are often unreliable as an index of cardiovascular-renal disease,* warn J. R. Caldwell and F. W. Hollinger in the July issue of *Postgraduate Medicine* (*24* : 26, 1958). In a study of 355 patients with hypertension according to a "casual" office reading they found less than one-third with cardiomegaly or any sign of severe hypertensive disease. Because blood-pressure readings vary so widely from time to time in the same individual and because blood-pressure is subject to psychologic influence the authors suggest use of the basal pressure as a criterion for hypertension. The basal pressure, is the lowest pressure obtainable with the patient at rest and is reached usually in 20 minutes. Determination of basal blood-pressure is of value before prescribing antihypertensive drugs, but it is particularly of value in separating "transient hypertensives," or "vascular hyper-reactors" from patients with sustained hypertension.

ELECTRO-CONVULSIVE THERAPY FOR ELDERLY PATIENTS

G. E. Wolff (*Am. J. Psychiat.*, November, 1957) reports that over a period of four years he has treated with electro-convulsive therapy, in the Camarillo State Hospital, 505 patients suffering mostly from chronic brain syndrome. Of these, 350 were elderly, mostly bedridden, and more or less in need of general care. A few of these have been so mentally disturbed that in spite of their age they have received electro-convulsive therapy for more than three years, and without exception have benefited from it. Some patients need maintenance treatment weekly, some every two weeks, some each month or longer. After a level of improvement has been reached, the next treatment is given as soon as the slightest regression is observed.

GLEANINGS FROM THE MEDICAL PRESS

MEDICINE & THERAPEUTICS

Medical treatment in epilepsy.—(*Brit. M. J., 1*: 666-669, Mar. 22, 1958, via *J.A.M.A.*, June 21, 1958).

The treatment of patients with convulsive seizures is divided into 3 parts: (1) removal of any factors, organic or psychological, that may play a part in the occurrence of seizures; (2) regulation of the physical and mental hygiene; and (3) administration of anticonvulsant drugs. The objective of all anticonvulsant therapy is to establish and maintain a reservoir of drug sufficient to control the seizures without producing significant side-reactions. Since the ideal anticonvulsant is not yet available, a choice must be made from a group of drugs, one or more of which is most effective for a particular seizure type or for a particular patient. When more than one type of seizure is present, a combination of drugs is usually more effective than a single drug. A combination of drugs will often be necessary even for patients with a single seizure type. The majority of anticonvulsants in common usage today are derivatives of barbituric acid, hydantoin, or oxazolidinedione. Other anticonvulsants commonly used at the present time include primidone (Mysoline), which has a structure similar to that of phenobarbital, succinimide derivatives, and carbonic anhydrase inhibitors. The use of these different drugs in the therapy of all types of seizures, except petit mal, are discussed.

For the successful treatment of petit mal, it is important to distinguish this seizure from other minor seizure types. The drugs commonly used for the treatment of petit mal seizures are derivatives of oxazolidine and succinimide. These drugs are not effective against other types of seizures and are thought by some to precipitate major seizure phenomena. When petit mal coexists with other seizure types, adequate therapeutic doses of phenobarbital and phenytoin sodium are indicated as well. Failure to obtain optimal results with anticonvulsant drugs is related to failure to recognize a progressive neurological disease, particularly brain tumours, failure to use proper drugs, failure to administer proper dosage, premature withdrawal of drugs, frequent shifting of drugs, poor indoctrination of the patient in regard to the therapy, and lack of recognition of the social and economic needs of the patient. The larger number of failures are related to failure to administer the proper amount of the drug and failure to use 2 or more drugs in combination. The results of treatment in 319 cases of epilepsy were as follows: controlled, 154 (48%); improved, 118 (37%); and uncontrolled, 47 (15%). The question arises as to when it is advisable to withdraw medication. Dr. Merritt makes it a rule to administer anticonvulsants to patients with any type of seizure except petit mal for a period of at least 3 years after all seizures have disappeared. At this time the dose of the drug can be reduced every 4 to 6 months by one-third to one-fifth of the amount required to control the seizures. If seizures recur, the drug should be readministered in full dosage. The results obtained in the attempt to discontinue anticonvulsant therapy in patients who had been seizure-free for a prolonged period have been disappointing, except for those with petit mal attacks.

Airline passengers.—(The following general principles covering various medical and surgical conditions are summarized by Dr. George J. Kidera in the *Current Medical Digest*, for July 1958).

DISEASES OF THE CIRCULATORY SYSTEM:—1. *Valvular heart disease*:—If the patient is symptom-free and fully compensated, there is no contra-indication to flight. Pressurization above 9000 ft. is recommended. If decompensated and dyspnœa is present on slight exertion, passengers should be rejected

for air travel unless covered by 100% oxygen all the way.

2. *Angina pectoris* :—If it is quiescent, there is no contra-indication to flight. If anginal pain is brought on by slight exertion, the patient should be rejected.

3. *Coronary thrombosis* :—It is recommended that the patient should not fly within 6 weeks after the initial attack. If the patients are ambulatory they may fly. Oxygen should be made available at all times.

4. *Hypertension* :—Ordinarily these patients do well in air travel. However, if prodromal symptoms of stroke are present, they should not be flown. Diastolic pressures above 110 should be carefully evaluated before being permitted to fly. Mild preflight sedation is recommended for most patients with hypertension.

Diseases of the respiratory system :—1. *Asthma* :—Patients in status asthmaticus should not be flown. Those with mild cases between attacks can travel without difficulty.

2. *Tuberculosis* :—Patients with active tuberculosis, a communicable disease, should not be flown. Those under treatment with pneumothorax should absolutely not be flown since changes in pressure could cause a shift in the mediastinum and sudden death. Patients with healed lesions of tuberculosis may be flown without any difficulty.

3. *Cancer of the lung, pulmonary abscess and bronchiectasis* :—Pulmonary reserve should be carefully evaluated. Any tendency toward dyspnœa on slight exertion should be a contra-indication to flying. Otherwise most patients in this category may be flown, but oxygen should be available at all times.

4. *Pneumonia* :—The extent of involvement of the lung must be known. If pulmonary reserve is seriously endangered, these passengers should not be flown. If they are comfortable at rest, they may be flown, but should be covered by oxygen at all times.

Blood diseases and metabolic disorders.—1. *Anaemias* :—If the hæmoglobin is not below 60% these passengers may be flown without question. Oxygen should be available to prevent a development of hidden anoxia.

2. *Leukaemia* :—May be flown. It is advisable to give a transfusion before the flight and to have oxygen available during flight.

3. *Diabetes mellitus* :—Patients may be flown provided they need no insulin during the actual time in the air. Diabetics who can administer their own insulin may fly without question.

Surgical cases :—1. *Convalescent surgical cases* may be accepted for air travel provided at least 10 days have elapsed since initial surgery and the abdominal wall wound is not open or draining.

2. *Gallbladder diseases* :—Usually excellent air passengers. They should refrain from gas forming foods before flight.

3. *Peptic ulcer - uncomplicated* :—Excellent passengers.

4. *Colostomy cases* :—Patients may be accepted for flight provided they are non-odorous aud colostomy bags are emptied before flight.

5. *Hernia cases* :—Persons with large, unsupported hernias should not be accepted, since increased intra-abdominal pressure and pressure from the seat belt may produce strangulations, especially in the sitting position.

Mental and nervous conditions.—1. *Mental deficiency and feeble-mindedness* :—Passengers with mild symptoms may be carried without question. Obviously insane patients with severe psychoses or agitation are dangerous to themselves and to the fellow passengers. So they should be prohibited from flying.

2. *Nervous passengers* :—Nervous passengers or those who are extremely "high strung" may be carried if given a sedative before flight.

3. *Diseases of the brain tumours, epilepsy and palsy* are usually not contraindicative to flight. However, if bowel or bladder control is lacking, rejection may be considered.

Pregnancy.—Pregnant female passengers may be flown without question within the first 8 months of pregnancy provided there is no history of premature birth or habitual abortion. Pregnant women may be flown during the 9th month of pregnancy providing they can furnish a statement from their attending obstetrician that they are not due to deliver within 72 hours of destination time.

Early infancy :—Infants below 7 days of age should not be transported by air for any great distance. The respiratory mechanism is not yet sufficiently established to permit the infant to be exposed to a respiratory stress.

Congenital abnormalities :—Congenital head conditions and lung atresias are not ordinarily contraindicated to flight.

Massive doses of cortisone in hepatic coma.—(*Annals of Internal Medicine*, Vol. 48, No. 6, July 1958, pp. 1254).

Hepatic coma is a frequent terminal occurrence in advanced atrophic or postnecrotic cirrhosis. Coma can be precipitated in patients with pre-existing liver damage by hepatotoxic agent, infection, physical overactivity, inadequate diet, trauma or surgery. Hepatic coma carries with it a high mortality. Because of this many therapeutic regimens have been tried. The usual supportive measures have been used, such as maintenance of fluid, electrolytic balance, correction of anæmia, control of infection, antibiotics, intravenous glucose, vitamins and general nursing care. Many drugs have been tried. Aureomycin, tetracyn and terramycin in large doses have been administered and reports have appeared in the literature which indicate that these drugs may be of benefit.

Dr. Theodore Pessar and Dr. John Hessing give their experiences as a result of treating 6 patients admitted into the Queen's General Hospital, Jamaica, with hepatic coma. They were all treated with cortisone. The regimen employed was as follows: 250 mg. of cortisone every six hours for from one and a half to two days; then 250 mg. every 12 hours for from one to two days; then 250 mg. daily for from one to two days. Cortisone was then discontinued. In addition to cortisone each patient received supportive therapy as mentioned above. In addition all patients were given 3 to 6 gm. of potassium chloride daily, either by mouth or intravenously, the exact amount depended on serum potassium levels. All these six patients died. However the prompt response to massive steroid therapy was striking. Normally, patients who die in hepatic coma do so without regaining consciousness. In the present series, all but one were alert, coherent, active and able to take nourishment by mouth. This is important indeed.

The effect of garlic on certain intestinal bacteria.—(*Food Science*, Aug. 1958).

Dr. V. Subrahmanyan and his co-workers working at Central Food Technological Research Institute, Mysore, report in *Food Science* for August 1958 as follows :—

Spices and aromatics such as, garlic, *ajowan*, black pepper and asafoetida are being used extensively in the Indian dietary. These are also used in the Indian system of medicine for correcting a variety of intestinal disorders. Garlic in particular has antibacterial properties and is widely used both in intestinal disorders and for a number of infectious diseases. The antibacterial activity of garlic has been shown to be due to the presence of allicin which on *in vitro* tests, has been found to inhibit the growth of a number of micro-organisms.

Subrahmanyan *et al* studied the antibacterial activity of water extracts of a number of common spices on intestinal bacteria and reported that garlic was the most potent one. They also investigated the effect of incorporation of garlic in the diet on the intestinal microflora of rats and found that garlic brought down considerably the number of coliforms, anærobes and total count in the cæca of rats fed

either stock diet or poor South Indian diet containing high percentage of redgram *dhal*. In view of the widespread use of garlic in the Indian system of medicine for treating certain intestinal and other disorders, it was felt desirable to study the relative susceptibilities to garlic of different organisms, inhabiting the intestines in health and disease.

The surface of garlic bulbs was sterilized by dipping the bulbs in alcohol and burning it. The sterilized bulbs were macerated well with 15 ml. of sterile water and centrifuged. The clear supernatent layer was used in these studies. The garlic extract was added to 50 cc. of sterile glucose, tryptone, yeast and tomato extract broth, in a conical flask, so as to give a concentration of 30, 20, 15, 10, and 5 mg. of garlic per cc. of broth.

The micro-organisms selected for this study were *E. coli, S. faecalis, L. casei, M. aureus, and S. sonnei*. 0·4 cc. of the 18 hour-old culture of each organism was inoculated into each flask containing sterile broth with and without garlic and incubated at 37°C. At the start and at the end of 6 and 24 hours of incubation, the number of organisms present per cc. of the broth were determined by direct-microscopic count method. The quantity of acids produced by the organisms at the end of 48 hours of incubation was found out by titrating against standard alkali.

It was observed that the concentrations of garlic required to inhibit *L. casei* and *S. faecalis* are much higher than those required to inhibit *E. coli, S. sonnei* and *M. aureus*. While the growth of *E. coli, S. sonnei* and *M. aureus* is markedly inhibited at 10 mg. level, the growth of *S. faecalis* and *L. casei* is inhibited only at 20 mg. level. At 5 mg. level only *M. aureus* and *S. Sonnei* are inhibited.

The results indicate that the incorporation of garlic in the diet at moderate levels, is likely to shift the balance of the microflora in the intestines in favour of lactic organisms, which generally have a favourable effect on the absorption of the minerals present in the diet.

Intra-arterial nitrogen mustard in the treatment of pelvic cancer.—(*Annals of Internal Medicine*, April 1958).

In advanced and nonresectable neoplastic disease certain chemical agents have been found to have some effect in slowing the growth or in producing temporary regression of the tumour tissue.

Twenty-nine patients were all hospitalized in the Memorial or James Ewing Hospitals. In each case there was histologic evidence of recurrent malignant neoplastic disease.

After the skin is anæsthetized with procaine, a thin-walled needle (No. 18, 19 or 20) is introduced directly into the femoral artery, which is easily located by palpation. The spurt of arterial blood from the needle indicates that the artery has been entered. The appropriate catheter (No. 18, 19 or 20) is then threaded through the needle and passed retrograde through the femoral artery into the abdominal aorta at a level which is calculated to be 2 to 3 cm. above the bifurcation. In the first few such procedures the catheter was localized by a roentgenogram taken while a few cubic centimeters of Diodrast were being injected. This has not been necessary routinely, however, since introduction of the catheter to a distance of 25 cm. from the skin puncture has proved satisfactory in the average case. This distance is modified for very tall or very short patients. It has been found helpful to fill the catheter with saline and maintain it thus by closing the proximal end of the catheter. This prevents reflux of blood into the catheter and clotting. When the catheter is properly positioned, the nitrogen mustard is injected through it, followed by a few cubic centimeters of saline to flush out the system.

In most cases the nitrogen mustard was administered as a single dose of 0·4 mg. per kilogram of body-weight. This dose was chosen because it is the usual intravenous dose and is generally well tolerated, with only transient bone marrow depression.

The procedure has caused no discomfort beyond the transient nausea and vomiting usually associated with the systemic administration of nitrogen mustard. No serious hazard has been encountered. In this series some degree of improvement was noted in 62%. In 48%, improvement was of significant degree and prolonged to a period of a month or more. In the patients treated in this series we have observed definite, measurable decrease in the size of tumour masses, marked decrease in pain, and relief of obstructive œdema.

The patients in this series were all treated with HN2. As other agents with useful antitumour effects become available it may prove worthwhile to test their effectiveness when administered by this technique. The standard dosage of 0·4 mg./kg. was utilized in most of these cases. By the use of fractionated dosage it might have been possible to achieve a greater total dosage—this has been done by those who have previously attempted the intra-arterial route of injection. However, there is no evidence that protracted administration of HN2 has given greater therapeutic effect, and in this series single dose administration has been used.

We conclude that this procedure has a place in the palliative treatment of patients with pelvic malignancy. It is simple and easily mastered, and there have been no serious technical or toxic complications. Thus, it appears to be a useful adjunct to the palliative care of this particular group of patients with far advanced, inoperable neoplastic disease.

The nephrotic syndrome in chronic mercury poisoning.—(*University of Leeds Medical Journal*, June 1958).

It is well recognized that the long-term treatment of cardiac failure with mercurial diuretics, especially if dietary salt is restricted, may lead to the development of the low-salt syndrome (deGraff and Nadler, 1942; Schroeder, 1949; Black and Litchfield, 1951); and that if this condition is not rapidly recognized and rectified the continued use of mercurial diuretics leads to increasing œdema and proteinuria and early death (Preedy and Russell, 1953). Munck and Nissen (1955 to 1956) stated that only one example of the nephrotic syndrome caused by mercurial diuretics had previously been described. This patient, (Derow and Wolff, 1947) showed œdema, proteinuria and hypoproteinæmia, but there was 'the picture of acute mercurialism with shock, renal insufficiency, hypochloraemia' and the patient died a month after the onset of acute symptoms. The description is that of renal failure complicating the low-salt syndrome.

It appears that mercurial compounds may give rise to œdema, albuminuria and hypoalbuminaemia in two quite distinct ways. The inorganic compounds may be responsible for the development of the nephrotic syndrome as defined by Squire (1953). The course of the disease is measured in months and provided the administration of mercury is stopped the prognosis is excellent. In sharp contrast the nephrotic picture arising in patients with congestive heart failure receiving mercurial diuretics is probably always secondary to disturbances of the serum electrolytes. If the true nature of the condition is not recognized the course amounts to a few weeks at the most and the outcome is fatal.

There can be no doubt that in organic preparations of mercury may be responsible for the development of the nephrotic syndrome. In the past such an illness has followed not only industrial poisoning but also therapeutic poisoning with mercurial ointments, teething powders, worm powders containing calomel, or, in the present example, Guy's pill. Fortunately proprietary teething powders in this country now contain no mercury, although some chemists are still dispensing mercurial powders on request (Abramson, 1956).

Whether or not mercurial diuretics can cause the nephrotic syndrome without first disturbing electrolytic balance remains to be shown. The instances so far reported are not sufficiently detailed to allow judgement.

The danger of continuing mercurial therapy in the face of increasing œdema and proteinuria has been demonstrated only too frequently.

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SURGERY

Anæsthetists' records.—(Robert D. Dripps, James E. Eckenhoff, and Leroy D. Vandam, *Introduction to Anaesthesia*, W.B. Saunders Co., Philadelphia, 1958, via *Current Medical Digest*).

Anæsthetic records can be of value to patient, anæsthetist, surgeon and nursing staff. If one has at regular intervals observed and recorded the pulse rate, respiration, blood pressure and other pertinent factors, he can more accurately determine the patient's condition at a given moment. A good record of a previous anæsthesia is of considerable help if a patient has to be anæsthetized again. There are medico-legal reasons for keeping accurate records, since their review can establish the course of events more convincingly than recourse to memory. In an article entitled "Prevention of Malpractice Claims," Dillon states that in a 10 year experience of reviewing cases of alleged malpractice, he has yet to see 1 in which the records of the anæsthetic course were complete.

Colle's fractures—Classification and Treatment.—(Drs. E. O. Geckeler and D. J. Gross in the *Pennsylvania M. J.*, *61*: 486-488, April 1958, via *J.* of *A.M.A.*, *167* : No. 10, July 5, 1958).

Most of the so-called Colle's fractures are not as simple as they usually are considered. The textbooks fail to emphasize that most of these injuries are not only fractures of the radius but, in a great many instances are complicated fractures with involvement of the wrist joint. In addition, there may be damage to the pronator quadratus, the flexor tendon sheaths, and the median nerve. The injuries collectively known as Colles' fracture can be classified as simple (true Colles' fracture), which is stable and as complicated which is decidedly unstable. However the simple type comprises only about 12% of the injuries known as Colles' fracture and 88% of all wrist fractures are of the complicated type.

Fractures in the aged.—(*Surg. Gynaec. and Obst., 106* : 343, 1958 via *G. P.*).

Bick has studied a group of 500 elderly people with fractures to gauge the relative advantages and disadvantages of the current concepts of fracture therapy when applied to these patients.

It appears that reparative osteogenesis in the aged occurs within a time span equal to that of adults of all ages, but osteoporotic bone produces osteoporotic callus. Manipulation and surgery should be deferred until recovery from the shock of trauma. Ageing bone will not withstand the internal pressures of screws, plates or nails as readily. Since aged tissue has decreased strength and elasticity, early motion, while desirable, should be gentle to avoid overstretching and injury. Early "out of bed" is important, and the patient must be given greater freedom of action for movement of arms and legs.

Large benign gastric ulcers.—(*Surg. Gynaec. & Obst., 104* : 746, '57, via *G.P.*, April, 1958).

For a number of years it has been held that gastric ulcers four centimeters or more in diameter are almost surely malignant. That thought has been supported by the report in 1928 of Alvarez and MacCarty who found only two benign ulcers as large as four centimetres in diameter among 638 benign gastric ulcers removed by resection. Turner and his co-workers have shown that the dictum "large size equals malignancy" deserves re-consideration. The increase in incidence of giant benign gastric ulcers is attributed to a change in the surgical therapy of gastric ulcer. Thirty years ago, gastroenterostomy was done frequently for gastric ulcer, whereas gastric resection is now employed almost routinely. Hence, more large benign gastric ulcers are now available for pathologic study.

Among the 100 cases of giant ulcer reported by Turner's group, 93 of the patients had a symptom complex that was suggestive of peptic ulcer. In addition, most of the patients had lost a large amount of weight, gastric hæmorrhage had been a feature in 26 patients, vomiting had been a significant symptom in 51 patients and 17 patients had a palpable epigastric mass. In about half of the patients, the diagnosis, based on clinical and roentgenologic findings, was carcinoma of the stomach. Gastroscopic examination did not appear to be of value in the differential diagnosis. Values for free gastric acidity tended to be less than normal.

At the time of surgical exploration, when the surgeon definitely stated his opinion about the lesion, an erroneous diagnosis of carcinoma was made in about half of the cases. Apparently that error was based on the large size of the lesion, the presence of sizable masses of inflammatory tissue and the involvement by perforation or penetration, of adjacent organs (pancreas, liver).

In 95 of the 100 cases, the ulcer was located on or near the lesser curvature of the stomach.

This experience with benign gastric, ulcers of large size supports the thought that a diagnosis of malignancy should be established by study of frozen sections before extensive and radical resection of the stomach and adjacent structures is performed for an ulcerating type of gastric lesion. As the authors point out, such practice would avoid the occasional instance in which a more radical procedure, with its attendant increase in morbidity and mortality, is performed for what actually is benign disease.

Immunity to homografts.—(*Ann. Surg., 147* : 273, 1958, via *G.P.*, Aug. 1958).

When a skin homograft is applied to a human recipient for the first time, it becomes vascularized, grows and proliferates. After the homograft appears to have become successfully adjusted to the host site, the blood vessels of the graft undergo generalized thrombosis and breakdown, the epidermis becomes necrotic, and, in a few days, the viable segment of tissue has become a blackened eschar. This sequence of events occurs in a seven- to -ten-day period after the homograft is applied.

Rapaport and Converse have studied the immune response to multiple-set skin homografts in man and have found that after the first skin homograft is rejected, subsequent homografts from the same donor are rejected, in an accelerated fashion (four to five days).

This rejection period is not increased by using subsequent homografts. However, if 80 days elapsed between applying the homografts, the rejection rate was the same as for the first homograft. Further, if a second skin homograft is placed on a patient within 26 days after rejection of the first homograft. the site of the immediately preceding homograft from the same donor will develop erythema, œdema and pruritus at the time when the second graft is rejected. If a third homograft from the same donor is then applied, the first site will remain quiescent but the immediately preceding site will develop erythema, etc. Finally, when four successive skin homografts from one donor were applied to the same recipient at intervals not exceeding one week, the last three grafts developed a progressive change in colour in the first three days and became white and opaque, gradually changing to a pale eschar.

Combined therapy for carcinoma of the lung.—(*Am. J. Roentgenol., 79* : 491, 1958 via *G.P.*).

Krabbenhoft and Leucutia analyzed the results of various methods of treatment of carcinoma of the lung exclusive of surgical procedures in 393 histologically proved cases. A compilation of survival times indicated that when roentgen therapy alone was used, 37·9 per cent of the cases so treated lived less than one year. When nitrogen mustard was added to the therapeutic plan, the percentage of patients

living less than three months was 29·2 per cent, whereas the percentage of those living less than 12 months was 58·4 per cent, and of those living more than one year was 12·4 per cent. It can thus be seen that about 8 per cent of the patients lived up to nine months longer when roentgen therapy and nitrogen mustard were used together.

The authors' technique in administering roentgen therapy with both 200 KV and 550 KV consists in the use of parallel opposing fields over the mediastinum and affected lung areas. The fields are kept as small as is consistent with adequate treatment in order to protect as much of the lung parenchyma as possible. Where the carcinoma is extensive and it becomes necessary to fibrose part of the lung, this is accepted as a necessary complication. The nitrogen mustard is administered in doses of 0·1 mg. per kg. daily for four consecutive days. Usually a maximum dose of 8 mg. is given per day. It is administered into the tubing of an intravenous saline infusion.

Surgical methods of treatment of tuberculosis of children and adolescents.—(*Vestnik khir, 80:* 16-23, March 1958, Leningrad, via *J.A.M.A.*, 9-8-'58).

Cavernous types of tuberculosis of children and adolescents give unfavourable prognosis when treated conservatively. The introduction of streptomycin and of other chemical therapeutic substances has not solved the problem. Surgical methods are beginning to play an important role in the complex treatment of children and adolescents with cavernous pulmonary tuberculosis. An analysis of 131 patients operated on gave a postoperative mortality of 3%; there was empyema in 2·3% and bronchial fistula in 3·8%. Follow-up revealed deaths from tuberculous process on the operative side in 2 patients. The remaining 120 patients (91·6%) are practically well and free from tubercle bacilli. Attention is called to the fact that the mediastinum in children and adolescents has considerable mobility. The author therefore, advocates introduction of a pneumothorax 3 to 5 days before the operation. This results in gradual replacement of the mediastinum and in giving the general organism an opportunity to adapt itself to new conditions. Pulmonary resection is indicated for the following conditions: (1) in the presence of multiple cavities of the lung; (2) in patients with marked fibrosis surrounding a pulmonary cavity; (3) in the presence of tuberculous lesions and bronchiectasis; (4) in patients with bronchial stenosis; (5) in the presence of diffuse lobar infiltration after preliminary but ineffective antibacterial therapy; (6) in cases of caseation of the lung; (7) after prolonged but ineffective pneumothorax; and (8) after ineffective thoracoplasty, extrapleural pneumothorax, and oleothorax; employment in these patients of thoracoplastic procedures and of extrapleural pneumothorax is seldom successful. One of the peculiarities of the course of tuberculosis in children and adolescents is bilateral involvement. Of the 441 children treated in the Shulutko's clinic, 45 to 50% presented bilateral involvement. They were treated by artificial pneumothorax of one side and operative resection of the other side. The important problem in the treatment of bilateral tuberculosis is the maximal sparing of healthy tissue. This is best accomplished by a sparing bilateral resection.

Results in the surgical treatment of mitral stenosis.—(*Ann. Surg., 47*: 614-624, May 1958, Philadelphia, via *J.A.M.A.*, 9-8-1958).

The ideal objective of mitral commissurotomy is the complete opening of the fused valve and mechanical separation of any fusion of the chordopapillary system without producing mitral insufficiency. With pump-oxygenators being available and the increased success of techniques of intra-cardiac surgery under direct vision, the question arises concerning the advisability of using these techniques in the correction of mitra

stenosis. This report reviews the results which have been obtained by nonvisual methods of surgical treatment in mitral stenosis at the Vanderbilt University Hospital with the hope of formulating a rational approach to the question of "open" surgery in this disease. 148 patients were subjected to operation for mitral stenosis. The records of clinical evaluation were available on 108 patients, all of whom were found at operation to have stenosis. Varying degrees of insufficiency were also present in 40 patients. Twelve patients died of complications associated with the operation, a hospital mortality rate of 11%. Seven late deaths occurred, 2 from accidental causes in patients who had obtained excellent clinical improvement. Twenty patients, including those classed as late deaths, either were unimproved or were worse after the operation. The causes of failure in the majority of these appeared to be associated insufficiency of the valve or incomplete separation of the valve leaflets at the time of operation.

Other factors which prevented improvement and which contributed to the death of some patients were: (1) the presence of chronic auricular fibrillation; (2) the presence of calcification of the valve leaflets or of intra-atrial thrombosis; (3) the presence of advanced pulmonary and myocardial damage associated with mitral stenosis of long standing. Definite, and often marked, improvement of the patients' physical status was achieved in 76, or 70%, of the group. It would appear that the opportunity for further advancement in the treatment of acquired valvular disease lies in the utilization of techniques which allow for the direct visual repair of defects and ultimately, perhaps, for the replacement of those valves which are irreparably damaged by suitable prosthetic devices.

OBSTETRICS & GYNÆCOLOGY

Clinical evaluation of electronically irradiated catgut, Number 2-0 chromic and Number 3-0, Plain, in episiotomy repair.—(*Georgetown University Medical Centre Bulletin*, July 1958).

The most frequently used surgical procedure in obstetrics today is episiotomy to prevent the development of cystocele, rectocele, and prolapse of the uterus.

A total of 150 cases of routine episiotomy repair with Number 2-0 chromic electronically irradiated catgut and 150 cases of episiotomy repair with Number 3-0 plain electronically irradiated catgut were observed and results recorded.

Electronic irradiation is a new method of sterilizing surgical catgut sutures. The great advantage of this method of catgut suture sterilization is the fact that the suture material is sterilized in the final sealed container, whether plastic or glass, in contrast to heat sterilization methods where sealing of the final container is accomplished after the sterilization procedure. In the case of collagen a greater safety factor is obtained with electronic beam sterilization than with heat sterilization.

1. There was very little or, practically speaking, no tenderness or swelling or pain with Number 3-0 plain electronically irradiated catgut in episiotomy repairs in primiparas and multiparas.

2. It could be used for mesiolateral and median episiotomies.

3. The healing properties were satisfactory with less tissue reaction, better tensile strength of the suture material, and greater stimulation of fibroblasts in granulating tissues. The healing was better with Number 3-0 electronically irradiated catgut than with Number 2-0.

4. The patients did not require much medication or analgesics to relieve tenderness and soreness.

5. The entire group of 300 patients in this series felt good even as early as the third day post-partum.

6. There was no technical difficulty with these types of catgut.

7. There were no febrile reactions. Handling properties were satisfactory.

8. There was no evidence of post-partum wound infection, localized tissue reaction to catgut, or systemic allergic reaction to these types of catgut suture materials.

VENEREOLOGY

Cortisone and syphilis. Results of corticotherapy preceding penicillin treatment in 120 cases of syphilis.—(Graciansky P. de, and Grupper C. 1957, *Rev. franc. Et. clin. biol., 2,* 579, via *B. J. of Venereal Diseases*).

The authors present a further report of their experiences at the Hospital St. Louis, Paris, with preliminary cortisone followed by penicillin in the treatment over a 5-year period of 120 patients with syphilis at various stages. Various schedules and dosages of cortisone were employed, including 100 mg. cortisone by mouth or intramuscular injection for periods ranging from one to 5 days or longer. Hydrocortisone was also used, and in two cases an intravenous infusion of 25 mg. ACTH (corticotrophin) in glucose-saline was given. Local treatment with cortisone was employed in cases of interstitial keratitis and hydrocortisone was instilled into the joints in cases of arthropathy associated with tabes dorsalis. During the last year of the study thirty cases were treated with 30 mg. daily of 4-1-dehydrocortisone ("cortancyl") for 6 days, a single injection of long-acting penicillin being given on the 4th and 5th days. Throughout this investigation the authors have consistently given either a single injection or a single course of injections of various types of long-acting penicillin. During the last 2 years of the study a single injection of 2,400,000 units of a long-acting preparation was the sole penicillin therapy administered. All the patients were admitted to hospital during the treatment period and the usual examinations and tests carried out.

One of the authors' many interesting conclusions is that cortisone prevents or attenuates the Herxheimer reaction either in its clinical form or as a febrile response in all stages of syphilitic infection. It modifies the clinical manifestations of all stages of the disease, this modification being usually towards amelioration and healing of the lesions, but complete healing was not observed with cortisone alone. The findings in respect of primary lesions differed from those of Turner and Hollander (*Bull. Johns Hopk. Hosp.*, 1950, *87* : 505) who studied the effect of cortisone on artificially induced syphilis in rabbits. Favourable results were obtained in the treatment of a small number of cases of neurosyphilis with lightning pains which had proved resistant to other forms of therapy. Further, signs of activity of the syphilitic infection were modified by cortisone therapy, treponemes often disappearing from primary and secondary lesions, and the titre of reagin in the serum in cases of primary and secondary syphilis was reduced or the usual rapid increase in titre in these cases was halted. In cases of tertiary syphilis with clinical evidence of activity there was also some fall in the reagin titre, but in cases of latent syphilis with a low titre no fall was observed after cortisone therapy. In the few cases in which the treponemal immobilization test was performed a fall in the titre of the immobilizing antibody was observed following cortisone. Changes in the cerebrospinal fluid were reversed, the raised cell and protein contents first returning to normal, followed later by the serological and colloidal gold reactions.

Cortisone did not appear to modify the sensitivity of *Treponema pallidum* to penicillin, and it was of particular value in hypersensitive subjects and those with a history of previous penicillin sensitivity. It was also found useful in the treatment of pregnant women and in patients with syphilis of the cardiovascular and central nervous systems.

OPHTHALMOLOGY

Incidence and detection of glaucoma by routine tonometry.—(G.L. Porter, *Transactions of the American Academy of Ophthalmology and Otolaryngology, 62* : p. 54. Jan.-Feb. '58, via *The Sight-Saving Review*, No. 2, Summer, 1958).

This discussion is limited to the chronic simple type of glaucoma as a diagnostic problem. The author suggests that diagnostic studies be divided into two groups. The primary group, for use on all patients over 40 years of age, would include history, ophthalmoscopy, tonometry and slit lamp microscopy. The secondary group, to be used when the first tests indicate an abnormality, would consist of field studies, provocative tests, gonioscopy and tonography.

Ideally, all 59 million Americans over 40 years of age should be given tonometry by an ophthalmologist. This would mean an impossible 8,000 tests per ophthalmologist. Mass screening and routine tonometry by general practitioners and internists are possible solutions of the problem. In any case the close cooperation of the entire ophthalmologic profession is needed.

Out of the author's series of 2,000 private patients 44 persons (2·2 per cent) were ultimately found to have chronic simple glaucoma. Tonometry detected 35 of these cases (80 per cent) and missed nine cases, because their intraocular pressures were under 25 mm. This would suggest that mass screening surveys using tonometry would be up to 80 per cent accurate.

Of the 44 glaucoma cases, exactly half had optic nerve or glaucomatous field changes or both and the other half did not. Of the 22 cases so advanced as to show nerve and field changes, 16 had an initial pressure of 25 mm. or higher, while 6 had pressures below 25 mm. In the 22 cases without field changes or disc cupping pressure was elevated in 19 and less than 25 mm. in three individuals. Such patients, with normal pressures and no fundus or field changes, are especially difficult to diagnose, and it is possible that other cases of this kind escaped detection.

Ophthalmoscopy should not be neglected, but it reveals symptoms of glaucoma in an advanced stage, whereas it is desirable to discover the disease earlier. However, 50 per cent of the cases in this study had fundus changes, and 27 per cent of this group had normal pressures.

The secondary group of tests, especially visual field tests, are of the utmost value in diagnosing suspected cases, but Porter feels they are not suitable for routine use in initial screening. A considerable period may be needed to establish a diagnosis in doubtful cases, and these patients should not be told that they have glaucoma. In the author's experience it is virtually impossible to convince a patient who has received an erroneous diagnosis of glaucoma that he is free of the disease.

The eye of death.—(*Editorial, International Medical Digest,* March 1958).

Most physicians can remember—probably with miscellaneous, awful emotions—the discomfort they experienced when they were called upon for the first time to officially pronounce a patient dead. The unexpected sounds, real and imaginary, which may be heard when a stethoscope is placed on the chest of a recently expired patient, are strange and baffling. The doctor wonders—Is this patient really dead beyond revival?

Pathologists and clinicians are both aware of the need for a simple and readily available method for determining whether death has occurred. In addition to establishing the fact of death, reasonably accurate determination of the moment of death may be of prime importance legally.

The standard signs used to determine the fact and time of death are well known. However, one highly accurate and useful procedure is less widely appreciated: *viz.*, ophthalmoscopic examination of the fundus oculi.

The ocular changes observable at death have been emphasized by Kevorkian, who has correlated them with electrocardiographic records by means of coloured photographs of the fundus. He found that as the circulation slows, the arterial blood

columns become granular and the vessels become narrower. Within a minute of death the arterial pattern disappears. The choroid becomes pale yellow-orange when the circulation stops, and the optic disc dull white, being sharply demarcated from the retina which, gradually over a period of hours, changes through grey-yellow to deep grey.

The most important features though, are those seen in the venous vessels. When there is absence of cardiac output, the columns of venous blood become granular and segmented. When such signs are seen they indicate cessation of blood flow to the eyes and, therefore, to the brain. However, the venous segments continue to move and spill over the edge of the physiologic cup for at least 10 minutes after complete stagnation of blood. When these signs are produced experimentally, functional restoration of the circulation totally abolishes them in a few seconds. *Therefore, by examining the fundus oculi it is possible to distinguish between apparent and actual death; to determine (within limits) the time elapsed after death,* and—of fundamental importance—to determine the possibility of success from efforts at resuscitation.

DERMATOLOGY

Action of synthetic antimalarial drugs on psoriasis.—(T. Cornbleet, 1956, *J. Invest. Derm., 26* : 435, via *Br. J. of Dermatology*).

Because mepacrin does good in L.E. and in certain other dermatoses aggravated by light it seemed worth while to try if it would make worse maladies, for example psoriasis, ordinarily benefited by exposure to the sun.

In all of 6 subjects receiving a daily dose (for a period that is unspecified but would appear generally to have exceeded 10 days), of 100 mg. quinacrine 250 mg. chloroquine and 200 hydroxy-chloroquine the psoriasis became worse and began to affect the palms. Three to six weeks after the last dose the psoriasis started to improve and continued to clear until the patient had gained an amelioration of his initial state more or less equal to the worsening induced by the drug.

Next time the doses had to be doubled to get the same effect, and therapeutic usefulness is neither claimed nor expected; but it is nevertheless hoped that the observation may help to interpret the influence of light on psoriasis.

Leprosy: Significant advances during the last decade.—(R.G. Cochrane, 1956, *Med. Pr., 236* : 246, via *B. J. of Dermatology*).

This most valuable article should be read by all practitioners who may have to treat patients suffering from leprosy. Although the *Myobacterium leprae* does not fulfil Koch's postulates, there is now no doubt that this is the causative organism. The most probable portal of entry is through the skin.

The problems are dealt with under the headings:

(1) How can a general practitioner recognize a case of leprosy?

(2) Official procedures to be adopted when the diagnosis is made.

(3) Treatment.

(4) Complications in leprosy.

(5) Disposal of the infective case.

(6) Public knowledge and understanding of leprosy.

In dealing with the diagnosis it must be remembered that leprosy is, like syphilis, a great simulator and must always be considered whenever a person from a leprosy area is suffering from a dermatological condition which does not itch, which does not fit into one of the usual disease patterns and which has been present for more than six months. A nasal smear is almost useless in confirming a diagnosis of leprosy. Skin smears using corium tissue juice are much more diagnostic. Treatment and its dangers are given in detail and the author stresses the importance of

educating the general public to remove the stigma conveyed still by the word leprosy.

RADIOLOGY

The responsibilities of the medical profession in the use of X-rays and other ionization radiation.—(Statement by the United Nations Scientific Committee on the Effects of Atomic Radiation, *Ann. Chirurg. et Gynaec. Fenn., 46* : 481, 1957, via *J. of Int. College of Surgeons*).

This article surveys the sources and artificial irradiation of human beings and discusses radiation hazards. General recommendations are given with regard to medical and occupational irradiation.

The Scientific Committee on the Effects of Atomic Radiation established by the United Nations General Assembly accepts the view that the irradiation of human beings, especially of their germinal tissue, has certain undesirable effects.

Information received so far indicates that in certain countries (Sweden, United Kingdom, United States of America) by far the most important artificial source of such irradiation is the use of radiologic methods of diagnosis and that this may be equal in importance to radiation from all natural sources. It is possible that such radiation may be having a significant genetic effect on the population as a whole.

The Committee is fully aware of the importance and value of the medical use of radiation but wishes to draw the attention of the medical profession to these facts and to the need for a more accurate estimate of the amount of exposure from this source. The help of the medical profession would be most valuable to make it possible to obtain fuller information on this subject.

The Committee would be particularly grateful for information through appropriate governmental channels on ways in which the medical irradiation of the population can be reduced without diminishing the true value of radiology in diagnosis or treatment.

Preparation of colon for X-ray.—(*Am. J. Roentgenol., 78* : 725, 1957, via *G.P.*).

It is generally agreed that the proper preparation of a patient for roentgen examination of the colon requires the use of both an efficient cathartic and cleansing enemas. For this purpose, the most frequently advocated cathartics have been castor oil, compound licorice powder and phenolphthalein.

Kaufman used a preparation containing senna as the laxative component in 100 consecutive patients who were given either routine barium enemas or double-contrast colon studies. The material was taken as a single dose the evening before the roentgen examination.

Patients who were to have a double-contrast study were instructed to include three cleansing enemas prior to the actual examination, while in those having routine barium enemas, only a small saline enema was used before roentgen examination.

All of the patients found the material containing senna to be palatable and easily prepared. Compared to castor oil, there were fewer complaints of griping, sleeplessness and cramping. During the actual examinations there was not found to be any significant degree of spasm or irritability of the colon. In many cases, there was better cleansing of the distal colon than the author would have expected with castor oil. This method of bowel cleansing was most rewarding in patients undergoing double-contrast enemas. The appearance of fictitious polyps of the colon, seen on the double-contrast study due to undigested castor oil droplets, was avoided by the use of the senna preparation.

The best doctors in the world are Dr. Diet...Dr. Quiet...and Dr. Merryman.—(Dean Swift, *Current Medical Digest*).

REVIEWS OF BOOKS

Medicine for Dental Students—By A.K. NANDI, B.SC., M.B., M.R.C.P.E., Professor, Department of Medicine, Nilratan Sircar Medical College, Calcutta ; Teacher, University College of Medicine, Calcutta University ; Late Professor of Medicine, Calcutta Dental College, and L. K. Ganguli, B.SC., M.D., M.R.C.P., Hon. Visiting Physician, Nilratan Sircar Medical College and Hospital, Calcutta, etc. (1958). Published by U. B. Dhur and Sons (Private) Ltd., 15, Baukim Chatterjee Street, Calcutta-12. Price Rs. 10-50.

This extremely well-got up text book of medicine is meant primarily for students undergoing the B.D.S. course in Dentistry, and covers in clear and a really compendious manner nearly all the aspects of general medicine. We are told that the book has been designed to cover the University curriculum fully, and a few more topics ordinarily met with in our country have also been dealt with in quite an interesting way. Needless details have been carefully eschewed and the authors have taken meticulous care to provide to the dental students an adequate knowledge of general medicine relating to the diseases of the various bodily systems in about 18 chapters. The pathology, clinical features, diagnosis complications, treatment general and specific, and after-care have all been described in a very concise and easily understandable manner. We congratulate the authors on a piece of work exceedingly well done and the get up of the book compares very well with that of text books published in England and America. We confidently recommend this as a really valuable guide to all dental students.

Insecticide-Resistance in Arthropods—By A.W.A. BROWN, Geneva, 1958. 234 pages. (*World Health Organization* : *Mongraph Series*, No. 38. Price £ 1. 5s., $ 5.0, or Sw. fr. 15).

The resistance to insecticides developed by many insects which are vectors of diseases affecting man and animals has lately become an urgent public health problem of considerable importance. The WHO has quite recently issued a monograph on this subject in which Dr. A. W. A. Brown, PH.D., Biologist of the Division of Environmental Sanitation, WHO has drawn on all the sources available over the past decade, comprising some 625 publications and much unpublished information, and presented an exhaustive review of the literature and a concise account of the phenomenon.

He has described at length, the appearance, history and geographical distribution of resistance and evaluated them for each of the 40-odd species incriminated. The genetical origins and physiological mechanisms of resistance are treated elaborately in the light of available research findings. The physiological mechanism in resistance to DDT is mainly due to an increased ability to detoxify the insecticide, while the mechanisms of resistance to BHC, dieldrin and organophosphorus compounds are evidently more complex.

Resistance to DDT, on the one hand, and to BHC and dieldrin, on the other, have been shown to be two separate entities, Thus, in many cases dieldrin or BHC can be used to control DDT-resistant anophelenes and *vice versa*. Compounds have been discovered that are more toxic to DDT-resistant than to normal houseflies, and thus may be expected to result in the development of DDT-susceptible strains from DDT-resistant ones. We are glad to find that standard methods have been evolved by which resistance can now be detected in the field as soon as it appears and suitable action taken without delay.

This monograph *must* be read by all persons engaged in the control of insect-borne diseases envisaged in the Environmental Sanitation programme.

Nagarjun—We have received the annual number of this Ayurvedic monthly magazine published at New Alipore, Calcutta 33, in August 1958. It contains messages from very important personages in India.

wishing it continued success. This number carries interesting articles on the role of Suddha Ayurvedic System, the relation of Ayurveda and Astrology, of Ayurveda and Naturopathy, Dental Surgery, Mother and Child Welfare etc. It is very well got-up. We gather from the Editorial that this journal is all in favour of Ayurveda unalloyed with other systems, being taught in Ayurvedic institutions in the country. It has entertained a strong plea for a total revision of the curriculum in such a way that the 4 or 5 year course of study in the various States shall be completely devoted to a perfect study of Ayurvedic Medicine in Surgery in all its eight branches.

Bibliography of the Publications of the WHO—(1947–1957. Published by WHO *Palais des Nations*, Geneva, 1958. Cloth bound Edition available at 17/6 or $ 3.25, Sw. Fr. 10).

This exhaustive list of all publications of the WHO during the ten year period of 1947–1957, consists of 4 parts :-(1) Technical articles of publications in alphabetical order ; (2) administrative and general articles and publications arranged also alphabetically ; (3) an index of Authors and (4) an index of countries. The work is completed by a check-list of the titles in the various series published by the WHO. It should find a place in all scientific libraries of the world.

The Acute Abdomen—By WILLIAM REQUART, M.D., Clinical Assistant Professor of Surgery, University of Illinois College of Medicine. Second Edition 1958. Pp. 313. (The Year Book Publishers Inc., 200 East Illinois Street, Chicago 11, ILL.).

The purpose of this book is to present a discussion of the diagnostic problems in acute surgical lesions within the abdominal cavity and to present methods in arriving at a correct diagnosis. The author has succeeded admirably in this purpose. The first chapter is on the "Examination of the Abdomen". The next chapter is on "Differential Diagnosis from the Standpoint of Location and Type of Pain." The next few chapters deal with subjects such as diseases for which immediate operation is imperative, diseases for which operations may be delayed and diseases for which operation is contraindicated. This classification will be very useful to practitioners of medicine. A chapter on "Diagnosis of Acute Abdominal Lesions in Infants" is a very useful addition. The book is printed on fine paper and is beautifully illustrated.

BOOKS RECEIVED

Care of the Premature Infant—By LUNDEEN and KUNSTADTER, Pp. 367. (Pitman Medical Publishing Co. Ltd., 39, Parker Street, London, W.C. 2) Price 60 sh. nett.

Human Embryology for Medical Students—By S. R. NAIR, Pp. 316. 2nd Edition. (Popular Book Depot, Bombay 7). Price Rs. 15/-.

University Medical College Magazine, Mysore—College Day Number, September '58.

Punjab Medical Journal—Special Number on Modern Treatment, Aug. '58 Part I and Sept. '58 Part II. Sodal Road, Jullunder City. Price Rs. 2/- each.

Annual Review of Biochemical and Allied Research in India—Vol. XXVIII for 1957. Pp. 198. Bangalore-3.

PREPARATIONS AND INVENTIONS

A new Anti-Inflammatory Compound

A new synthetic steroid hormone has been developed in the Research Laboratories of Merck-Sharp and Dohme, U. S. A. It is claimed to possess greater anti-inflammatory potency per milligram than any steroid yet produced. A clinical study and evaluation of this compound was undertaken by Dr. Edward W. Boland of St. Vincent's Hospital, Los Angeles and reported in the California Medicine. For details we refer our readers to M/s. Voltas Ltd., P.O. Box 900, Bombay 1.

NEWS AND NOTES

Soviet Experiments on Curing Lameness

In the Soviet Union experiments on the treatment of ankylosis and joint diseases by replacement of the affected joint by a healthy one has been conducted. The use of the patient's own bone is not a new theory. In the Soviet Union painstaking experiments on transplantation from one animal to another were conducted. Animals that had undergone this operation were found to be quite normal. Experiments have been conducted to determine how this bone could be preserved and how reactions could be avoided. Attempts at transplantation of semi joints are now being conducted at the Central Institute of Traumatology.

W.H.O. Session at Minneapolis, U.S.A.

Dr. A. L. Mudaliar, Vice-Chancellor of the Madras University and a former Chairman of the W.H.O. Executive Board, was the final speaker at the special session to commemorate the tenth anniversary of the founding of the World Health Organisation, recently. Dr. Mudaliar reviewed the significant health improvements made by the countries of South East Asia with help from W.H.O. No organization he said, had ever had more contact with the common man throughout the world than W.H.O. had today. After the close of the Commemorative Session, the Eleventh World Health Assembly began its sittings. The 1959 Public Health Programme adopted by the Assembly includes 800 projects in every country and territory in the world. It adopted its largest budget up-to-date. Malaria eradication is now under way in 76 countries, embracing nearly one-third of the world's population. The Assembly authorized the Director General to seek funds for malaria eradication not only from governments, but from all possible sources. On the question of the health aspect of the peaceful uses of atomic energy, the Assembly requested the Director-General to investigate concrete measures for dealing with this problem. The Assembly also opened the way for the Director-General to aid the underdeveloped countries in the use of radioactive isotopes in medicine. The problem of eradication of small-pox also occupied a prominent place.

Second Asian Conference

The Second Asian Conference of Occupational Health will be held between the 14th and the 23rd November '58 in Calcutta. The Patron is Sri Gulzarilal Nanda, Minister for Labour and Employment, Government of India. The Chairman will be Sri Jehangir Ghandy of Jamshedpur. The health problems of the Asian countries and the problems intimately connected with productivity and the standard of living of the workers will be discussed in this conference. Health insurance, family planning, the role of medical institutions and of environmental factors will be some of the important subjects that will be discussed at this conference. Visits to institutions will also form part of the conference. For further particulars please write to Dr. C. K. Ramachander, Secretary General, care of M/s. Parry & Co., Ltd., Ranipet, N.A. Dt.

The 28th Punjab Medical Conference will be held at the Glancy Medical College, Amritsar on the 28th and 30th November '58. There will be an open session of the Conference followed by scientific sessions eaeh day. A scientific and industrial exhibition will also be held during this conference. A novel item this year will be the exhibition of 'doctors' hobbies.'

For more particulars please write to Dr. Harcharan Singh, Hony. General Secretary, Reception Committee, 28th Punjab Provincial Medical Conference, Ranjit Singh Palace (Ram Bagh Gardens), Amritsar.

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Pages from 873 to 992 Contents on Matter p 873-A Index to Advertisers on Matter p. 873-B

THE ANTISEPTIC

Vol. 55, No. 12 CONTENTS DECEMBER, 1958

THE ANTISEPTIC

Vol. 55, No. 12 **INDEX TO ADVERTISERS** **DECEMBER, 1958**

"Thank you, Doctor!"

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Fat is also included in the diet because it can act as a carrier of fat-soluble vitamins A and D. Lack of Vitamin A is the single factor responsible for a large number of deficiency diseases. In some parts of the tropics, deficiency of Vitamin A is quite high. Lack of Vitamin D causes rickets. According to Health Bulletin No. 23 (a Government of India publication), minor degrees of rickets are probably more common in Indian infants and young children than is generally believed.

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REFERENCES—Werner S.C.: New Eng. J. Med., *252*, 661.
Langworthy C.F.: Ind. Eng. Chem., *1923*, 276.
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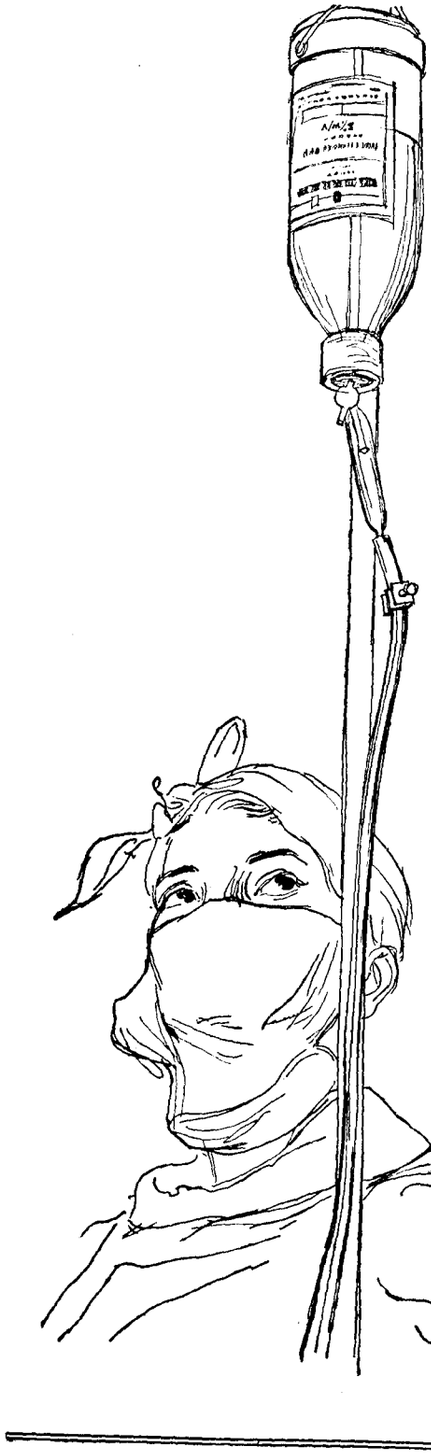

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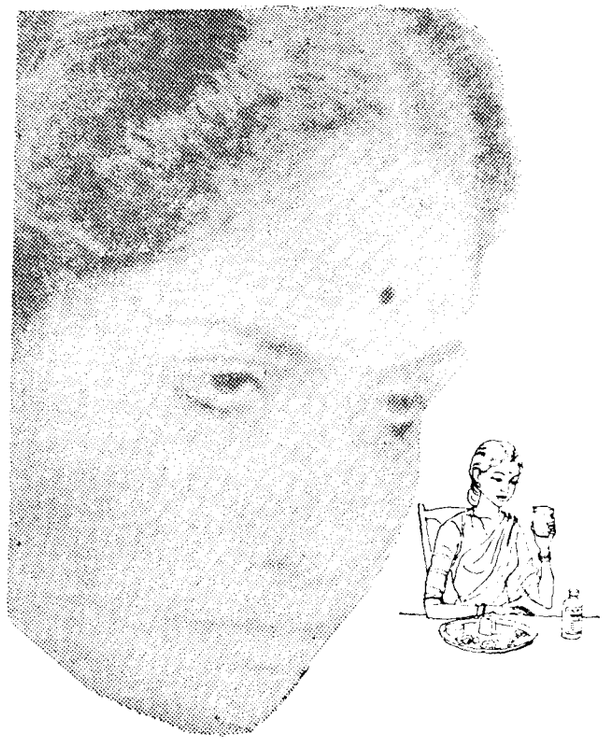

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Original Articles

PULMONARY AMOEBIASIS*

G. VICTOR, M.D.,
Physician, Govt. Erskine Hospital, Madurai

Introduction.—Extra-intestinal amœbiasis includes :—(1) Hepatic amœbiasis, acute amœbic hepatitis, and amœbic abscess of the liver; (2) pleuro-pulmonary amœbiasis; (3) cerebral amœbiasis; (4) cutaneous amœbiasis, (5) amœbiasis in other extra-intestinal sites such as the spleen, epididymis. testes, prostate, penis, fimbriated tubules, ovaries, cervix uteri, and vagina. Pleuro-pulmonary amœbiasis includes : (*a*) *Primary type*–(*i*) arising from the intestine *via* the blood stream or mesenteric lymphatics, and inferior vena cava without hepatic involvement ; (*ii*) by concomitant but independent involvement of the liver and lungs ; (*b*) *Secondary type*—(*i*) with pulmonary extension of an hepatic abscess ; (*ii*) due to broncho-fistula with pulmonary involvement ; and (*iii*) by empyemal extension from a hepatic abscess.

Aetiology and pathology.—The incidence of amœbiasis is higher in the tropics. It is said that the lower lobe of the right lung is involved in about 80% of cases. Pleuro-pulmonary amœbic infection as a complication of colonic amœbiasis is second only to that of hepatic infection and occurs in about 15% of cases of amœbic hepatic abscess. The condition is more common among men, in their third and fourth decades of life. Pulmonary amœbiasis is usually secondary to active invasion of the liver, when it is described as '*Secondary pulmonary amœbiasis.*' Most instances of infection of the pleura and lungs result from a direct extension from a liver abscess, which has perforated into

*Specially contributed to the ANTISEPTIC.

the pleura, lung, or bronchus. Thoracic complications nearly always occur as a direct extension of the abscess or hepatitis, through the diaphragm into the pleural cavity or into the lung through adhesions that have resulted from the inflammatory process. Thoracic amœbiasis when secondary, arises from intestinal amœbiasis or diffuse hepatitis, or a liver abscess. The common routes of invasion seem to be either directly through the diaphragm by destruction of the tissues or through the vascular channels of the diaphragm. Rarely could there be involvement of the lung, without obvious perforation, and at times by hæmatogenous spread, even without hepatic involvement. The latter goes by the term '*Primary pulmonary amoebiasis.*' Primary pulmonary amœbiasis developing through a direct hæmatogenous spread from intestinal lesions is very rare. Solitary abscesses within the lung substance and not adjacent to the right dome of the diaphragm have been described. These are embolic in origin and it is very probable that the amœbæ, reach the pulmonary circulation by going through the hæmorrhoidal veins into the inferior vena-cava or by anastomotic channels between the venules of the portal and vena-caval systems, within the liver.

The manner in which subdiaphragmatic infection extends into the thoracic cavity has been proved by studying the course of the lymphatic vessels in that area. Pathogenic organisms under the diaphragm can pass along the lymphatics into the thorax. Thus bacterial invasion spreading above the diaphragm could involve the chest, producing inflammation. The infection may pass into the lung either by way of an area of pleurisy or from an eympyema, resulting in pneumonia or lung abscess. Pus from an empyema or lung abscess may subsequently find its way into a bronchus from where it is coughed up. Thus localized consolidation with alveolar exudation and a monocytic response takes place, which is followed by hæmorrhagic necrosis, reactive fibrosis, and a chronic inflammatory reaction. As a complication, bronchiolar destruction and abscess formation with the formation of broncho-hepatic or broncho-hepatic-pleural fistula, may occur. Ochsner and De Bakey divide pleuro-pulmonary infection into the following groups: (*a*) hæmatogenous pulmonary abscess without liver involvement, (*b*) hæmatogenous pulmonary abscess and independent liver abscess, (*c*) pulmonary abscess extending from a liver abscess, (*d*) broncho-pulmonary fistula with minimum pulmonary involvement, (*e*) empyema extending from liver abscess, and (*f*) pleural effusion without true pus, due to amœbic infection affecting the pleura through the diaphragm but not infecting it.

SYMPTOMS AND CLINICAL SIGNS:—The clinical manifestations of amœbiasis of the lungs and pleura differ with the route of

invasion and the massiveness of the lesion. The symptoms start with pain which is often intense, experienced in the lower right chest, which is referred to the right shoulder quite often. This pain is due to inflammation of the diaphragmatic pleura. Later, unproductive cough sets in, which in course of time gives rise to hæmoptysis, and "anchovy-sauce" sputum. Fever at times with rigor and anorexia, fatigue, malaise, and extreme loss of weight also occur. Dyspnœa is observed if a considerable portion of lung tissue is involved. The liver is enlarged and tender. The leucocyte count is increased in the majority of cases. Clinically, restricted movement of the right dome of the diaphragm, pleural effusion on the right side, basal fibrinous pleurisy with the pleural rub, bronchitis and right basal broncho-pneumonia are met with. Signs of cavitation and rales are also found. Empyema is a serious and frequent complication. When an abscess communicates with a bronchus, chocolate-coloured purulent material is coughed up. With secondary infection, such pus may be yellow or creamy. Entamœba histolytica in the sputum will be negative in 20 to 40% of cases.

TABLE I

Showing details of patient's name, age, sex, complaint with duration, past illness

S. No.	Name	Age	Sex	Complaint with duration	History of dysentery previously
1	K.	35	F.	Fever with cough and expectoration —1 week	—
2	M.	30	M.	Fever with catching pain in rt. chest, then cough with expectoration - 6 days	Absent
3	S.	19	M.	Fever with cough, pain in rt. chest —3 days	Dysentery 1 month back, eosinophilic lung in 1948
4	K.B.	45	F.	Cough with expectoration—2 months, recent fever and pain left chest	Absent
5	T.B.	21	F.	Abdominal pain, nausea, anorexia, loss of weight - 4 months	Absent
6	S.	40	M.	Pain rt. side of abdomen, fever with rigor —2 months	Dysentery 4 months back
7	K.	23	F.	Pain in lower part of chest and epigastrium —2 months	Absent
8	T.	42	M.	Fullness of abdomen, indigestion, diarrhœa —6 weeks, cough with slight expectoration—last 2 weeks	Dysentery 1 year back
9	G.	25	M.	Cough without expectoration, pain lower portion of rt. chest, anorexia—3 months	Absent
10	U.	30	F.	Continuous fever—5 days and cough	Absent
11	D.	16	M.	Cough with bloodstained expectoration —1 month	Absent
12	M.	26	F.	Pain rt. chest—10 days (referred to shoulder), cough and loose motions—4 or 5 days	Absent
13	D.	62	M.	Dyspnœa, cough with expectoration, chest pain with diarrhœa (blood and mucus) —1 week	—
14	P.	30	M.	Swelling in abdomen and rt. side of chest —months, later breathlessness	Absent
15	M.	27	F.	Fever with rigor—6 months	Dysentery 6 months back

TABLE

Showing the Clinical and Radiological data, such as Respiratory System, Liver, Total WBC,

Serial No.	Clinical findings in the chest	Liver	Total WBC
1	Dullness to percussion over Rt. base, VF and VR diminished over the same area, breath sounds diminished but no adventitious sounds.	+	6800
2	Movements diminished over Rt. base, intercostal spaces filled out on Rt. base, VF diminished over the same area, dullness below Rt. scapula and below 3rd Rt. intercostal space breath sounds diminished over the same area, VR also diminished, no adventitious sounds.	+++	6200
3	Rt. side of chest moves less with respiration, VF increased over Rt. base, dullness to percussion on Rt. side below scapula and 3rd space in axilla, diminished air-entry over Rt. base, VR increased.	+++	10500
4	Rales heard over Rt. base.	+++	5800
5	Diminished air entry Rt. base.	++++	6600
6	Basal rales present over both bases.	Palpable	9600
7	Clinical signs of pneumonitis with few adventitious sounds on Rt. chest.	+++	5200
8	Rales and rhonchi heard over Rt. midzone and base.	Palpable	5800
9	On the Rt. side below the scapula-VF diminished, dullness to percussion, diminished air-entry, crepitations heard over the Rt. base.	+++	10300
10	Dullness on percussion over Rt. base, VF diminished over the same area, breathsounds diminished over Rt. midzone and base, VR little increased over the same area, crepitations over the same area.	+	6000
11	Dullness to percussion over Rt. base, breathsounds diminished in same area VF and VR diminished over the same area.	—	11200
12	Stony dullness over Rt. base, breath sounds absent over the same area.	Palpable	10200
13	Right side of chest moves less with respiration, diminished percussion note over Rt. side, VF and VR diminished over Rt. midzone and much diminished over the Rt. base.	Not palpable (Rt. hypochondrium tender)	12600
14	Stony dullness to percussion on Rt. side, VF diminished, breath sounds absent over Rt. base, cystic swelling over Rt. infra axillary area, markedly tender.	Stony hard tumour like mass felt in epigastric; liver palpable and four fingers' breadth below Rt. costal margin	16800
15	V.F. diminished over Rt. side, breath sounds diminished, impaired resonance.	++	6200

1I

DC, ESR, Sigmoidoscopy, Motion Examination, Sputum Examination and X-ray findings:

DC. P	L	E	M	E.S.R.	Sigmoidoscopy	Motion examination	Sputum examination	X-ray findings
68	26	2	2	95 mm	Nil abnormal	Nil	N.A.	Consolidation Rt. midzone and base
60	37	2	1	—	Perfectly normal	Nil	N.A.	Consolidation Rt. base with hazy costophrenic angle
75	20	5	-	—	—	Anky ova	Strepto, and staphylo	Pneumonitis Rt. base
40	60	-	-	58 mm	—	Nil	Staphylo seen in smear and grown in culture	Opacity Rt. base
55	43	0	2	75 mm	Mucus membrane absolutely normal	Nil	—	Opacity Rt. base
58	60	22	-	—	No pathology in mucous membrane	Anky and whip worm	Pus cells	Rt. dome of diaphragm raised Rt. pleural effusion
64	36	-	-	—	Absolutely normal mucous membrane	E.H. cysts seen	—	Peaking of Rt. dome and pneumonitis Rt. lung
70	24	2	4	—	Mucus membrane of rectum granular, plenty of mucous and blood seen, appearance suggestive of Amb. dysentery Microscopically — RBC& E.h., cysts	E.H. cysts seen	—	Rt. dome of diaphragm raised
52	42	0	6	120 mm	Mucus membrane normal	Nil	N.A.	Pneumonitis Rt. chest, in continuation with liver area
60	38	0	2	50 mm	—	Nil	N.A.	Pneumonitis Rt. chest
66	31	3	0	16 mm	No dysentery ulcers, mucous membrane shows slight congestion	Nil	Nil	Pneumonitis Rt. base
71	27	2	0	38 mm	No ulcers seen	—	N.A.	Rt. dome raised. Liver pathology
—		—		—	—	Anky ova	Pus cells	Loculated pleural effusion Rt. with consolidation Rt. lower lobe
76	24	-	-	—	—	Nil	Trophic forms of E.h, seen in chocolate coloured sputum coughed out	—
68	32			5 mm		Nil	Nil	Pneumonitis Rt. bone.

Table III

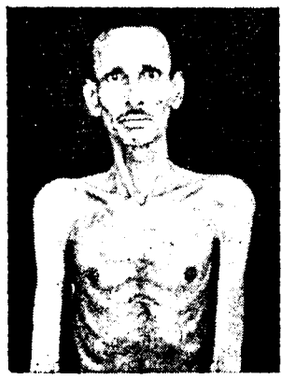
Treatment and Progress

S. No.	Treatment and clinical picture	Serial X-rays	Results
1	Emetine, EBI, Diodoquin, Yatren enema. Temperature subsided, lung signs disappeared, air-entry normal, liver not felt	Radiological improvement seen	Good
2	Emetine only	Rt. dome raised, Opacity rt. base cleared up	Fair
3	Emetine, EBI with Diodoquin. No temperature, liver not palpable, diminished air entry +, No adv. sounds	Opacity rt. base	Fair
4	Emetine, EBI, Diodoquin. Clinical improvement observed	Improvement present	Good
5	Emetine, EBI with Resotren, then Diodoquin, took long time for liver to recede	Improvement seen	Good
6	Emetine, EBI, Diodoquin. Area of consolidation, Rt. +++, Bronchial breathing and crepitations, Rt. aspirated 1 pint of thick pus (Chocolate coloured) from rt. pleural cavity—Smear: showed no organism. 3 days later 2 pints of thick pus tapped, 12 days later 1 pint. Penicillin and Terramycin given. Patient severely emaciated	Remarkable improvement	Excellent
7	Emetine, EBI, Diodoquin. Liver has disappeared completely. No lung signs at all	Consolidation completely cleared	Very good
8	Emetine, drug card issued for EBI and Diodoquin, patient did not turn up for further check-up	...	—
9	Emetine, EBI, Diodoquin. V.R. diminished, air-entry over outer aspect of rt. base improving, liver not palpable	Slight improvement	Fair
10	Emetine, EBI, Diodoquin. Clinically rapid improvement noticed	Remarkable improvement	Excellent
11	Nivaquine tablets 3, 1 t.d.s. Rales appeared, expectoration ++ in quantity, on discharge no clinical signs	Improvement seen	Very good
12	Emetine, Liver abscess tapped—50 ozs. Chocolate coloured pus withdrawn, then put on Chloroquin tablets	Improvement seen	Good
13	Emetine, 5 grains given, developed hydropneumothorax after starting Emetine. Patient left hospital against medical advice	...	...
14	Emetine, 9 grains, Chloroquin tablets, Terramycin injection, 20 ounces of chocolate-coloured pus aspirated from rt. pleural cavity	—	Very good
15	Emetine, 6 grains, EBI, Diodoquin. Penicillin and sulpha.	Irregular opacity close to rt. cardiophrenic angle; otherwise chest clear	Good

Diarrhœa or a history of diarrhœa is more often absent than present in these cases. Diarrhœa or a history of diarrhœa is more often absent than present in these cases. An X-ray picture of the chest shows a hump-like localized elevation of the diaphragm. Lung markings will be exaggerated between the hump and the hilum, as a result of tracking of the infection. In advanced stages, lung abscesses and pleural effusions are likely to occur. In cases of primary pulmonary amœbiasis, a patch of pneumonitis located far away from the liver and from the right dome of the diaphragm is met with.

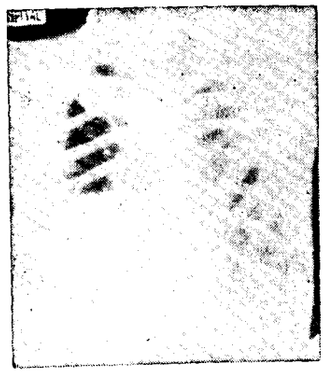
Diagnosis:—The diagnosis of pulmonary amœbiasis is arrived at from relevant history (of recent amœbic dysentery), the presence of entamœba histolytica in the motion either as vegetative or cystic forms, evidence of amœbic infection in the sputum, presence of the characteristic amœbic ulceration of the sigmoid colon, and by means of a therapeutic test *viz.*, response to a short course of emetine injections. Radiologically, an upward enlargement of the liver with or without peaking of the right dome of the diaphragm or pneumonitis of the right base would also assist in arriving at a diagnosis.

Treatment:—For pre-suppurative lesions such as pneumonitis, chloroquin diphosphate is the drug of choice. The dosage recommended is 1 g., for the first 2 days and 0·5 g. for the next 12 days. This drug provides an effectiveness equal to that of emetine. The inherent toxicity of emetine limits its use and the therapeutic margin of safety is somewhat narrow. Emetine is the specific drug for the treatment of thoracic amœbiasis. The recommended dose is 1 grain of emetine hydrochloride intramuscularly for 10 to 12 days. In severe dysentery, emetine hydrochloride is used as symptomatic therapy, to relieve the intense cramps and tenesmus. Aureomycin and terramycin act on organisms other than the amœbae and hence they are indicated in cases of toxæmia due to secondary infection. There are therefore, strong reasons for using the 2 drugs in conjunction with the established amœbicides. Solitary abscess of the lung, if not amenable to emetine treatment, must be operated on as for lung abscess; when multiple, the abscesses respond usually to emetine in a striking manner. Surgical intervention is indicated only when a secondary infection has occurred or when there is an empyema which does not respond to repeated aspirations. An extra-serous route is to be employed in the surgical drainage of an empyema or a liver abscess. Lobectomy or thoracotomy may be thought of, if and when there is severe damage to the lung.



Case 6. S.

Review of case records.—Out of 15 patients in this series, 8 were males and 7 females. The youngest was 16 years old and the oldest 62. Among the presenting symptoms, cough with expectoration and pain over the right lower chest were predominant. Only 4 patients gave a previous history of dysentery, the minimum interval between the occurrence of intestinal amœbiasis and the onset of symptoms of pulmonary amœbiasis being one month



Case 6.—Fig. 1. S., 2-3-'57.

Fig. 2. S., 10-3-'57.

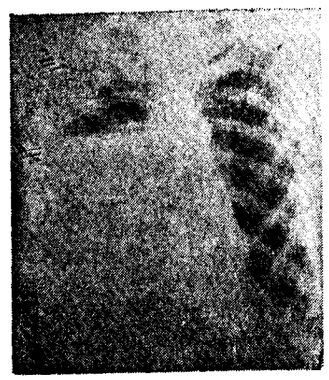


Fig. 3. S., 19-3-'57.

Fig. 4. S., 28-3-'57.

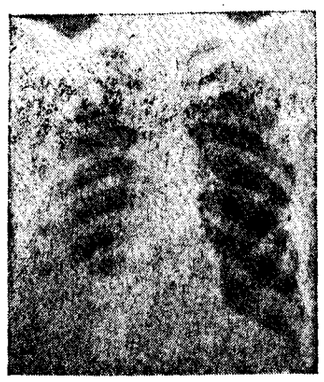


Fig. 5. S., 29-3-'57.

Fig. 6. S., 4-4 '57.

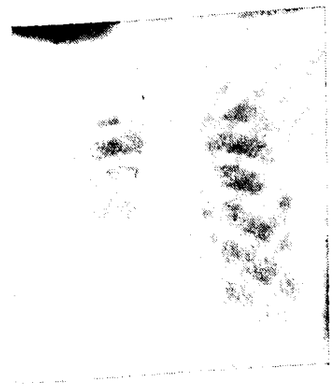


Fig. 7. S, 23-4-'57.

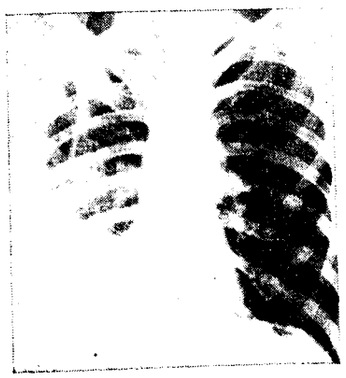


Fig. 8 S., 25-4-'57 (AP).

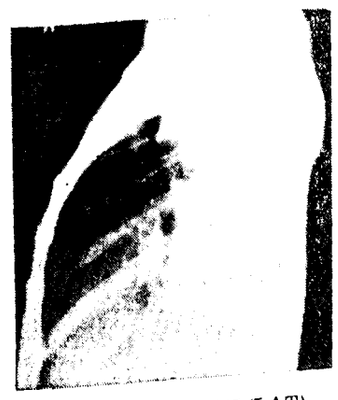
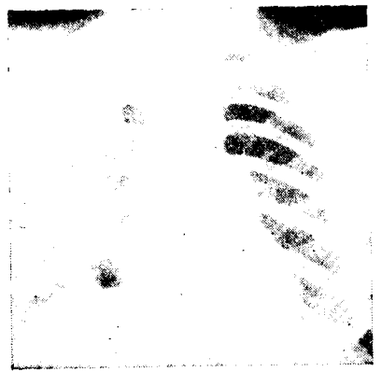


Fig. 8. S., 25-4-'57 (LAT).



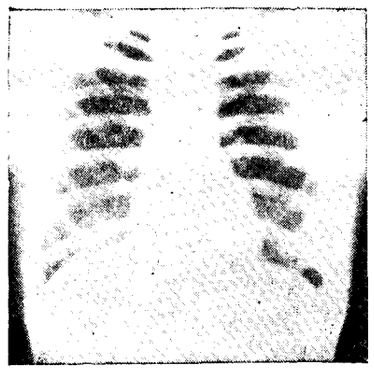
Case 7.—Fig. 1. K., 10-1-'57.

Fig. 2. K., 25-1-'57.

Fig. 3. K., 27-3-'57.

Fig. 4. K., 2-4-'57.

Fig. 5. K., 16-4-'57.



Case 10.—Fig. 1. U., 27-2-'57.

Fig. 2. U., 22-4-'57.

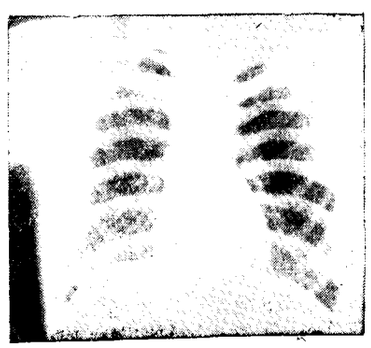


Fig. 3. U., 20-5-'57.

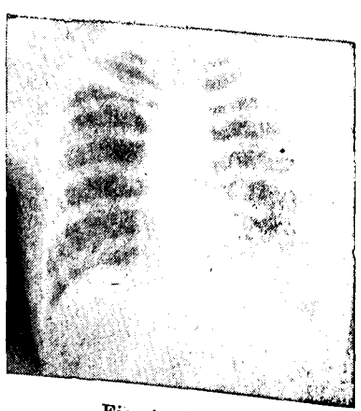
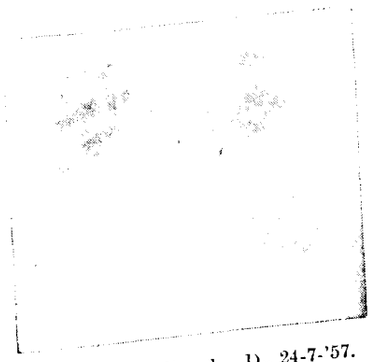


Fig. 4. U., 24-5-'57.



Case 11.—Fig. 1. D., 24-7-'57.

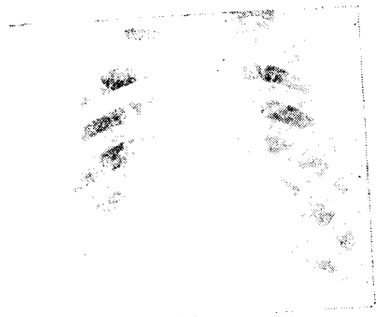
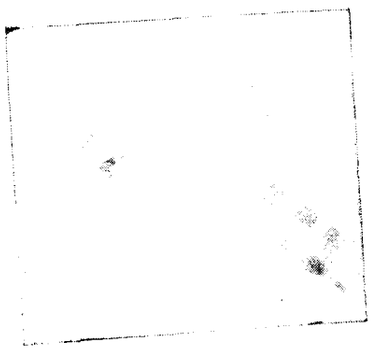


Fig. 1-a. D., 24-7-'57.

Fig. 2. D., 6-8-'57.



Fig, 3. D., 8-8-'57.

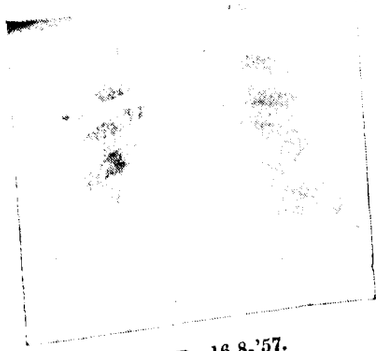


Fig. 4. D., 16-8-'57.

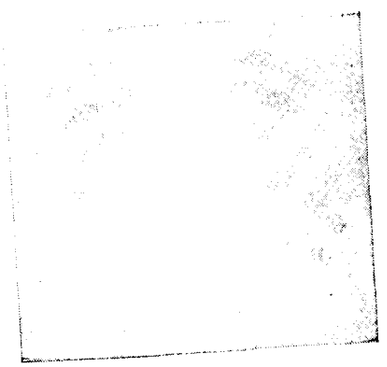


Fig. 5. D., 23-8-'57.

and the maximum 12. The liver was palpable and tender in 13 cases, leucocytosis was present only in 6 cases, the examination of stools revealed amœbic cysts in only 2 cases and there was microscopic evidence of amœbic infection in the sputum in only one case. Radiologically, involvement of the right side of the chest was present in all cases. As a routine measure, both tissue as well as lumen amœbicidal drugs were used for treatment, *viz.*, Emetine, EBI, Diodoquin and Yatren enema. Response to treatment (both clinical and radiological) was observed in all cases except one who left the hospital against medical advice.

Summary.—The syndrome of pulmonary amœbiasis is discussed in the light of its pathogenesis, symptoms, signs and diagnosis. A brief review of 13 cases is given. Tables I, II and III (*See* p. 875, 876 and 877) summarize details of the cases; and serial X-ray pictures (*See* p. 880 to 883) of 4 outstanding cases are also included.

Acknowledgement.—I wish to thank Lt. Col. K. N. Pisharoty, M.D., M.R.C.P., Dean of the Government Stanley Hospital, Madras, and Lt. Col. C. K. Padmanabha Menon, M.S., F.R.C.S., (Eng.), Superintendent, Government Erskine Hospital, Madurai, for according permission to publish the case reports.

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SURGICAL MANAGEMENT OF UNDESCENDED TESTES

Koop and Minor believe that the goal of an operation for an undescended testis should be a spermatogenic gonad in a cosmetically acceptable scrotal position. This operation should include a satisfactory method of dealing with a concomitant indirect inguinal hernia. The undescended testis may be in the retroperitoneal space, just within the internal inguinal ring, in the inguinal canal, at the entrance of the scrotum, or in a position ectopic to the usual line of descent. The undescended testis is most frequently found in the inguinal canal, usually attached securely to the medial side of the canal near the pubic tubercle.

To operate on an undescended testis, a transverse skin incision approximately 1½ inches long is made in a skin fold between the pubic tubercle and the anterior superior iliac spine. The external oblique aponeurosis is split in line with its fibres, and the external inguinal ring is opened. The testis and an associated indirect hernial sac are delivered, and the testis is freed from all cremasteric and other facial attachments, leaving only the spermatic cord and the vessels attached to the testis. In a very high testis, it may be necessary to free the spermatic vessels nearly to the level of the renal vessels to obtain enough length for the testicle to reach the lower part of the scrotum. Attention is then directed to the hernial sac. The sac must be ligated high. No repair of the inguinal floor is necessary. The testis is then placed in a subcutaneous pouch in the lower part of the scrotum. A silk suture through the testis is fixed to a rubber band that is fixed to the thigh for traction for two weeks.—(*Arch. Surg.*, 75 : 898, 1957).

THE NEPHROTIC SYNDROME*

D. P. GUPTA, M.B., B.S.,
Department of Pathology, S. M. S. Medical College, Jaipur

THE term nephrosis was used by Muller in 1905 to differentiate what he considered degenerative renal disease from other renal conditions to which the term nephritis was applied. Volhard and Fahr[12] described nephrosis as a condition in which degenerative changes were present and differentiated this from the inflammatory or arteriosclerotic group. Munk[10] in 1925 considered that the term nephrosis should be used to include all degenerative lesions of the kidney whether of the albuminous, fatty, lipoid, necrotic, hyaline, amyloid or glycogen types. Evans[7] restricted the term to those types of Bright's disease which were associated with amyloidosis or syphilis. Allen used the term for either chronic glomerular diseases of the kidney with œdema (lipid nephrosis) or tubular disease involving the proximal or distal or both parts of the renal tubules. Fishberg's[8] conception of nephrosis is of a non-inflammatory disease of the nephron.

Most of the above observers noted degenerative changes in the tubules and therefore, pathologists came to recognize the term nephrosis as being synonymous with tubular degeneration. It was however realized later that the picture which had earlier been attributed to pure tubular degeneration could also result from primary glomerular lesions with secondary tubular changes. Hence, in recent years, the term has been replaced by the term "nephrotic syndrome," which refers to a group of conditions associated with massive albuminuria, no hæmaturia, marked œdema, high blood cholesterol and normal blood pressure. This clinical complex is often referred to as the "pure syndrome" which is to be distinguished from the 'impure,' 'mixed,' or 'complicated' nephrosis in which hæmaturia, hypertension, varying amounts of pyuria and azotæmia may be found associated. This is clear from the work of Ellis[5] who analysed 600 cases of nephritis in 1941, 200 of which were examined histopathologically. His observations, extending over a period of 20 years in the London Hospital, led him to differ from the picture of acute glomerulonephritis, outlined in the text-books. He labelled his cases into two types (Type I and Type II) of nephritis, although the use of the term "nephritis" for the second group is questionable. The criteria used in his classification were :—

Type I nephritis.—(1) Abrupt onset ; (2) as a rule, preceding a history of infection ; (3) hæmaturia is nearly always present ; and (4) the course is variable, for which there are four possibilities :—(*a*) 85% patients recover completely. (*b*) Death

*Specially contributed to the ANTISEPTIC.

may occur in the acute stage, due to either acute heart-failure or uræmia, the exact mechanism being not yet clear. (*c*) In some, the œdema, hæmaturia and hypertension persist and may even increase; the renal function deteriorates progressively and without any subsidence of symptoms the patient dies with hypertension and renal failure within weeks or months of the onset of the illness. This is the subacute nephritis of Volhard. (*d*) Slowly progressive course: Here, the patient appears to be recovering but albumin persists and in a few cases, the blood-pressure remains a little above normal. The patient eventually dies of hypertension and renal failure, but only after a period which is measured in years or even decades, during which he is usually in good health, although albumin is always present in the urine. (5) It is predominantly a disease of children and young adults.

Type II nephritis: is characterized by (1) an insidious onset; (2) which has no definite relation to preceding infection; (3) hæmaturia is slight or absent; (4) recovery is rare. The course is steadily progressive. Secondary infection is the cause of death in most cases and there is progressive renal failure and hypertension in the rest; and (5) It may occur at any time during life.

Confirmation of the views expressed by Ellis[6] has come from many workers including Davson and Platt[4] (1949) who also stated that "the concept so common in text books of œdematous nephritis as an usual intermediate stage between the acute and chronic phases is at variance with clinical experience."

The clinical complex of the nephrotic syndrome may be due to:—

I. Lesions of the glomeruli.—(1) Diabetic intercapillary glomerulosclerosis; (2) amyloidosis of the kidney—primary or secondary; and (3) lipoid nephrosis which Allen[1] calls membranous glomerulonephritis, including that due to syphilis; (4) disseminated lupus erythematosus; and (5) toxæmias of pregnancy.

II. Lesions of tubules.—To this group belong patients in whom the lesions reside primarily in the renal tubules. Lucke (1946) labelled these cases as "Lower nephron nephrosis," but the fallacy of the term was brought out by Bull and Dible who suggested the term "Acute tubular necrosis." A toxic factor perhaps operates in the presence of renal ischæmia, giving rise to the same clinical sequence of events by a variety of conditions markedly divergent from each other, practically in all other respects. It is doubtful, if acute tubular necrosis plays any part in the production of a true picture of nephrosis and therefore, it will not be discussed here.

III. Bilateral renal vein thrombosis.—The nephrotic syndrome in this condition is due to increased pressure within the glomerular capillaries produced by the elevated pressure in the venous system behind the thrombosed veins resulting in abnormal permeability to proteins.

The nephrotic syndrome is therefore, due mainly to lesions resulting primarily in the glomeruli which will be described in detail below.

A. Diabetic intercapillary glomerulosclerosis.—It was believed that in this condition, the lesions were 'intercapillary' *i e.*, affected the mesangium of the glomerulus. But Allen[1] believes that the essential lesion is a capillary sclerosis. This view is supported by the studies of Bell and Hall.

Two types of histopathological lesions are seen *viz.*, the nodular and the diffuse. These were first described by Kimmelstiel and Wilson[5] and the condition is often named after them. Clinical evidence of diabetes may disappear with the onset of diabetic glomerulosclerosis and renal failure. The nodular lesion is characterized by the presence of sharply localized hyaline mass in the centre of the tuft or one of its lobules. It is argyrophilic and trypsin-resistant. This appearance has been suggested to be due to:—(*i*) a broadening of the intercapillary connective tissue (Boyd[3]); (*ii*) a splitting of the capillary basement membrane (Allen[2]); (*iii*) a plugging of the glomerular tufts with fat emboli with exudation into and between the capillary walls (Hartroft); (*iv*) but the lesions are primarily 'a capillary sclerosis' as recently shown by Allen[1] *et al.*

The diffuse form is non-specific and consists of the deposition of fibrillary and hyaline material extending from the hilum to the periphery of the glomerulus.

Diabetic glomerulosclerosis alters in some way the glomerular permeability which cannot be attributed to the histopathological hyaline nodular masses. From a study of the serial sections, it is evident that a capillary loop is enormously dilated and stretched around practically each of the hyaline spheres and it is believed that markedly dilated glomerular capillaries, which have thereby become abnormally porous to proteins, and which loosely envelop the hyaline bodies of diabetic glomerulosclerosis constitute the mechanism for the loss of protein in the urine.

A thickening of the efferent arterioles with a narrowing of the lumen in diabetes has also been noted and this might add an extra increment to proteinuria by raising the intra-glomerular pressure.

Tubules, chiefly the loops of Henle show a clear appearance due to glycogenic as well as lipid infiltration. The lumina may show hyaline casts.

B. Amyloid nephrosis.—The lesions are the same as seen in diabetic glomerulosclerosis. These deposits however, show amyloid staining reactions. The nephrotic syndrome does not occur unless there are extensive glomerular lesions. The albuminuria is explained as being due (*a*) to a stretching of the capillary loops as described in the case of diabetic glomerulosclerosis, or (*b*) to the thickening of the capillary loop itself—since it makes the wall excessively porous.

The site of deposition of the amyloid is controversial:—(*a*) Boyd[3] believes that the amyloid is deposited on the inner side of the capillary basement membrane, between it and the endothelium; (*b*) others believe that the amyloid is deposited outside *i.e.*, in the mesangium; (*c*) Allen,[1] is however, of the opinion that amyloidosis represents an intrinsic alteration within the reticulum and the collagen of the walls of the capillaries, rather than an extramural accretion.

C. Lipoid nephrosis or membranous glomerulonephritis.—The former term was used for the reason that birefringent lipids were present in the epithelial cells of the proximal tubules. It is now known however, that these lesions are secondary to the glomerular lesions which give rise to a leakage of proteins and lipids. The glomerular lesions consist of an uniform thickening of the basement membranes of the glomerular capillaries and may take two forms:—(1) a diffuse membranous glomerulonephritis or (2) a chronic lobular glomerulonephritis.

(1) *Diffuse membranous glomerulonephritis*:—Is characterized by an acidophilic thickening of the walls of the glomerular capillaries of the entire Malpighian tuft of all the glomeruli. Boyd[3] believes that this thickening is the result of a deposition of protein material between the two basement membranes, while Allen[1] contends that the change is primarily in the reticulin and collagen of the capillary walls themselves.

Despite the increased thickness, these capillaries are abnormally permeable, particularly to albumin and also to some extent to globulins. This may be evident from the presence of granular material which fills and dilates the Bowman's space and the presence of proteid casts in the collecting tubules etc. At one time the proteinuria of lipoid nephrosis was attributed to the presence of abnormal plasma proteins (dysproteinæmia) against which the normal glomeruli were an ineffective barrier, but this view is no longer held to be correct.

(2) *Chronic lobular glomerulonephritis*:—This is the histopathological lesion which is usually associated with "mixed nephrosis" *i.e.*, the nephrotic syndrome complicated by hypertension and often by a certain degree of renal insufficiency and some degree of hæmaturia and pyuria. No normal glomeruli are found and the Malpighian tufts are transformed into four or five brightly eosinophilic PAS—positive lobules resembling the lesions of diabetic glomerulosclerosis.

But there are also some distinct differences between the two:—(See *Table I*, below).

Table I

Showing the points of difference between chronic lobular glomerulo-nephritis and diabetic glomerulo-sclerosis

Chronic lobular glomerulo-nephritis	Diabetic glomerulo-sclerosis
1. No glomeruli are spared.	1. One or several glomeruli are involved.
2. Lobules within a tuft tend to be of an uniform size and relatively cellular	2. Lobules are irregular in size and less cellular.
3. The surrounding capillaries are thickened.	3. The enveloping capillaries are thin-walled.
4. Lobules are scattered all over.	4. Characteristically, the single or probably initial lobule is located opposite the glomerular hilum.
5. Silver stains reveal irregularly arranged argyrophilic fibres.	5. Delicate laminations can be detected within the lobules.

Lobular glomerulonephritis, probably represents a more fulminant variant of diffuse membranous glomerulonephritis in which the walls of many of the glomerular capillaries have undergone fibrinoid swelling and coalescence.

Aetiology of membranous glomerulonephritis:—It is often contended that infections play no part in the evolution of this condition which is at times supported by finding a low antistreptolysin titre in the patients. Further, it is mentioned that in some cases, Type II nephritis may be the result of drugs (unlike Type I nephritis). But drugs like sulphonamides may give rise to acute hæmorrhagic glomerulonephritis. Moreover, although the nephrotic syndrome may result from renal lesions of disseminated lupus erythematosus and of toxæmia of pregnancy, these same disorders may provoke the clinical and histologic picture of the hæmorrhagic Type I glomerulonephritis.

Thus low grade, clinically inapparent infections or immunological responses to pre-existing infections with altered antigen-antibody relationships on the basis of an anamnestic provocation or of mechanisms as yet unknown, may be credibly hypothecated. The relationship between Type I and Type II nephritis is further brought out by the experimental production of Type I

nephritis by a relatively weak nephrotoxic rabbit-anti-rat kidney serum and of Type II with a larger amount of serum or a more potent but qualitatively identical serum. It has, therefore, been suggested by Allen[1], that Type I and Type II glomerulonephritis represent not separate disease entities but rather different grades of response to a variety of stimuli which in many instances are qualitatively similar.

The renal lesions in toxæmias of pregnancy,—eclampsia and pre-eclampsia and disseminated lupus erythematosus are identical with those of diffuse membranous glomerulonephritis and hence the former two are usually considered to be special varieties of membranous glomerulonephritis.

D. Toxaemias of pregnancy.—The lesions in this condition were stressed by Lohlein and Fahr and later by Bell and consist of ischæmic glomeruli with diffusely and uniformly thickened basement membranes. Sometimes, the picture may be modified by the presence of focal fibrinoid eosinophilic alterations of the glomerular basement membranes, so as to stimulate the glomerular "wire-loop" changes of disseminated lupus erythematosus. The tubules may show hydropic, fatty or hyaline degenerations.

E. Disseminated lupus erythematosus.—In 33% of cases, clinically significant renal involvement occurs and in 60%, histologic evidence of renal affection is noted. The lesions are nearly always focal and consist of focal, brightly eosinophilic, homogeneous, generally non-granular thickening of one or more segments of the glomerular capillaries (wire-loop lesions). Portions of glomeruli or some whole glomeruli may be completely spared. Occasionally, the focal fibrinoid degeneration assumes the pattern of verrucal intraluminal thickening—a change often mistaken for thrombosis.

If a sufficient number of glomeruli are involved, there occurs a protracted proteinuria of a degree required for the appearance of the nephrotic syndrome.

Mechanisms of œdema and diuresis in lipid nephrosis:—*Oedema :*—(1) Eder and his associates authoritatively state that œdema in nephrotic syndrome is the result of primary tubular preponderance resulting in renal tubular absorption of water and sodium and chloride ions in excess of that required for the maintenance of a normal extracellular volume.

(2) Another hypothesis is that the hypoalbuminæmia of the nephrotic syndrome causes a transfer of fluid from the plasma to the interstitial space resulting in a decreased plasma volume and potential circulatory insufficiency, which in turn stimulates the secretion of anti-diuretic hormone and cortical steroids (aldosterone) that are believed to cause excessive tubular reabsorption of sodium, chlorides and water.

(3) Yet another view is that the failure of the cells to transport or retain potassium, resulting in deviations of potassium between the cells and the interstitial fluid is the primary defect and the kidney reacts to it by retaining the sodium. It is believed that in the nephrotic syndrome, intracellular proteins are released to replace the diminished plasma-proteins and along with this release of intracellular proteins, a corresponding amount of potassium is also released into the plasma to be excreted in the urine.

Diuresis :—Diuresis in nephrotic syndrome occurs when there is a retarded tubular absorption or an increased excretion of sodium. The probable role of cortisone and ACTH in inhibiting the anti-diuretic hormone is not yet proved. The permeability of the basement membranes as judged from the diminished excretion of proteins is also usually restored to normal after successful treatment.

Biochemical changes in the nephrotic syndrome :—1. In the nephrotic syndrome, besides low albumin, there is an increase of *alpha*$_2$ and *beta* globulins and a depression of the *gamma* globulins. But in diabetic nephrosis, *gamma* globulins are normal or are slightly elevated.

2. Blood urea tends towards the lower limits of the normal range.

3. The serum cholesterol is high, as also the fibrinogen.

4. Copper and iron-carrying globulins are reduced to one half.

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CEREBROSPINAL FLUID PRESSURE DURING LABOUR

McCausland and Holmes (1957) have possibly explained the enigma of tragedies following spinal anæsthesia in parturient women. They have shown that during the bearing-down effort in the second stage of labour the cerebrospinal fluid pressure is grossly elevated, reaching 700 mm. in one-third of cases. Variations of this magnitude are known to be hazardous in conjunction with spinal anæsthesia.—(*W. J. Surg.*, *65* ; 220, 1958).

DIABETIC RETINOPATHY

When retinopathy develops in diabetes, raised blood pressure and systemic vascular disease are often present. The duration of diabetes is the most important factor in the production of retinopathy. Approximately 70 per cent of patients who have had the disease for twenty years or more have some form of retinal lesion. The clinical picture, while not pathognomonic for diabetes, has certain characteristics distinguishing it from arteriosclerotic, hypertensive, or renal retinopathies. Ophthalmoscopically the earliest changes affect the smaller blood vessels. Retinal changes include: (1) small capillary aneurysms and punctate hæmorrhages in the macular area, (2) yellow or waxy, somewhat glistening, and usually sharply circumscribed exudates, which later tend to coalesce, (3) "cotton-wool" patches, which may indicate the onset of complicating hypertension (these lesions represent ischæmic infarcts, usually the result of arterial spasm), (4) multiple thromboses due to dilatation of the veins, and (5) recurrent vitreous hæmorrhages, which may become organized and vascularized (proliferating retinopathy).

Adrenal and pituitary factors in diabetic retinopathy suggest that hypophysectomy or adrenalectomy may be of value.

The effect of intravenous Priscoline on the angioscotoma in 27 cases of diabetes was studied by Cholst and his associates. Ten cases revealed good response. In nine of these no retinal exudates were found.

Special emphasis should be placed on: (1) nutrition and disease and how they affect the body, (2) heredity, (3) improved insulin and insulin administration (in the presence of retinal hæmorrhages, insulin should be given with the greatest care and under most expert supervision), (4) the endocrine system with special reference to the glucosteroids, (5) the inter-relation of carbohydrate, fat, and protein metabolism, (6) electrolyte and water balance, and (7) correlation of the above studies with further investigation of degenerative vascular changes in the fundi.—(*N.Y. State J. Med.*, Jan. '58).

PARATHYROID TUMOURS

Malignant tumours of the parathyroid glands are rare, but benign tumours of these glands often result in hyperparathyroidism which may end fatally if untreated. A single adenoma is responsible in 80 per cent of cases of hyperparathyroidism, less than 10 per cent are due to multiple adenomas, and approximately 10 per cent are caused by primary hyperplasia. Black has found that the size of the adenoma does not correlate with the severity of the disease.

Many of the symptoms of hyperparathyroidism are accounted for by the increased serum concentration of calcium, the decreased serum concentration of phosphorus, and the increased concentration of both in the urine. Hypercalcæmia causes lassitude, weakness, anorexia, nausea and vomiting, distention and constipation. The diuretic effect of the parathyroid hormone causes polyuria and polydipsia. Urinary lithiasis is a common complication. The associated demineralization of the bones may result in pain, deformities and fractures.

The only known successful treatment of a functioning parathyroid tumour is surgical removal. Although the solitary adenoma is usually the rule, thorough dissection and exposure of all parathyroid glands must be done in order to verify or eliminate the possibility of multiple adenomas or diffuse hyperplasia. The parathyroid glands are usually four in number and are usually found near the lower poles of the thyroid gland. One or more of these glands may at times be substernal. If the surgical removal is successful, a dramatic fall in the serum calcium will occur in the early postoperative period.—(*Am. J. Surg.*, 95: 395, 1958, via *G.P.*).

KERATOPLASTY*

D. P. AGGARWAL, M.S., D.O.M.S., Z.O. (vienna),

Department of Ophthalmology, M.G.M. Medical College, Indore, (M.P.)

WE are all aware of the many tragedies in life caused by blindness due to corneal opacity. The joy that will be brought into the households of these patients by skilful corneal grafting is indeed of a very high order. During recent years techniques have been perfected, and the prognosis made more certain in properly selected cases. The full scope of this most interesting subject is very wide and I propose to deal in this brief article with only three aspects of the problem: *viz.*,—(1) Selection of cases. (2) Co-aptation and (3) Fixation of the graft.

Selection of cases.—A proper selection of cases is very important, otherwise failures will only reflect adversely on the statistical evaluation of the operative procedure.

Age:—In very young patients like those below fourteen years penetrating graft should be avoided due to lack of control and cooperation. But where it is feared that the child will develop amblyopia, he may be operated under proper sedation.

Mental state:—The extremely anxious, nervous and non-cooperating patients are less likely to do well.

General conditions:—Disturbing cough, diabetes and other grave systemic diseases require prior treatment.

Adjacent infection of face:—The skin in the vicinity of the eyes should be free from dermatitis or pustules. Smear, and culture from conjunctival sac and trial bandage should be negative.

Eyelids:—Blepharitis, trichiasis, entropion or ectropion should be effectively treated. It is important to ensure that the lashes do not rub on the eye producing harmful effects on the normal graft.

Cornea:—In the presence of active keratitis the graft may be done for therapeutic purposes only. Vascularization of the cornea is a great enemy of the graft. The deeper the vascularization, the graver are the effects. So this should be reduced by peritomy, beta rays and cortisone. Where vascularity is very marked, keratectomy and lamellar grafting may be useful.

Any great disparity in the thickness of the donor graft and recipient cornea disturbs the nourishment and fixation of the graft. The graft may become opaque or dense; a membrane may form behind it. Preliminary lamellar grafting may produce a cornea nearer to normal thickness.

*Specially contributed to the ANTISEPTIC.

Density disposition and extent of the corneal opacity influence the success of the graft. The graft should be surrounded in at least half of its circumference by clear cornea.

Lacrimal secretion :—In diminished secretion the prognosis is worse and lacrimal canaliculi should be cauterized. If secretion is abolished the graft always becomes opaque. Schirmer's test may be useful in assessing the extent of diminution of secretion.

Iris :—Small anterior synechiæ may be freed at the time of operation but will render the prognosis worse. It is better to free the synechia much in advance of grafting. Active iridocyclitis (K.P.) circumciliary congestion and tenderness contraindicate grafting. This may be ascertained by estimation of the protein content of the aqueous by Pandy's reagent and by enumerating the cells in a counting chamber after a diagnostic puncture of the anterior chamber. Albumino-cytological dissociation indicates a low grade inflammation while the presence of numerous cells indicates active uveitis.

The position, size and shape of the pupil and the depth of the anterior chamber must be noted. Transillumination using two lamps on each side of the eye and flashed alternately is quite helpful. The position and movement of light patch on the opaque cornea informs us about the position and size of the pupil and the depth of the anterior chamber if they cannot be seen directly.

Lens :—Lenticular opacities are no contraindication. First grafting should be done and then the lens extracted at a later stage. Aphakia lessens the chances of a corneal graft remaining transparent especially if vitreous comes in contact with the graft.

Retina and choroid :—There should be accurate projection of light and the macular function normal.

Glaucoma :—Intra-ocular tension must be examined and sufficient time allowed to elapse for any operation for relief of tension before grafting is attempted. Hypotony is also a contraindication for grafting.

Visual acuity :—It should be usually fairly low, less than 6/60. The loss of vision should be due solely to corneal opacity and to no other associated lesion.

In neuroparalytic keratitis, leprous keratitis, corneal lesions of pemphigus, erythema, multiforma (Stevens Johnson's syndrome) and traumatic opacities with dense vascularization, corneal grafting is contraindicated.

Donor graft :—Formerly corneas obtained from eyes recently enucleated due to tumour glaucoma, injury, etc., were used.

But now as these have become comparatively less as compared to the number of keratoplasties our main source of supply is from still-born children and cadaver cornea. All agree that it is advisable to obtain the eye or the cornea as soon as possible after death with all aseptic precautions.

Eyes from young adults are best due to greater vitality and eyes not having suffered from diseases and toxæmias of age. But corneas from senile persons are easier to keep in place due to their rigidity.

Eyes from persons who die of septicæmia or acute infectious disease, tuberculosis or syphilis should not be used. Also corneas from eyes not in perfect anatomic condition or local reaction should not be utilized. A suitable donor-cornea should be of normal shape with normal curvature. It should have a bright sheen and be transparent. It must not be swollen and should cut with a firm consistency.

Role of proper coaptation and fixation of the corneal graft in preventing post-operative complications. —The post-operative complications in corneal grafting are usually due to poor coaptation of the graft. This may be due to a defective or oblique cut (See *Fig 1*, alongside).

Faulty fixation and differences in thickness between recipient and donor corneas.

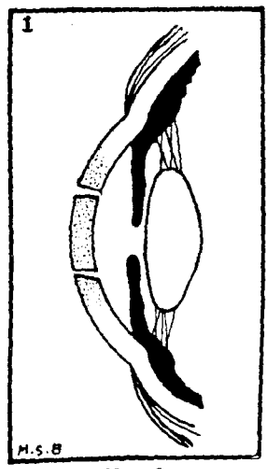

Fig. 1

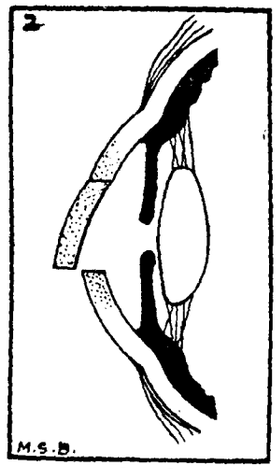

Fig. 2

1. *Displacement of the graft* :—Displacement of the graft into the anterior chamber is extremely rare. But its displacement out into the conjunctival sac or bulging forwards, ectasia of a part (See *Fig. 2* above) or entire circumference of the graft does happen specially if the patient is restless. Insufficient fixation and an oblique cut in the graft or the recipient cornea play an important role in this mishap.

2. *Infection* :—Improper closure of the anterior chamber due to faulty coaptation of the graft favours infection. Irregular cuts inflict greater trauma producing greater dead cellular elements. Gaps in the wound due to defective coaptation and fixation greatly increase the incidence of secondary infection.

3. *Oedema*:—The more perfect the coaptation of the graft, the less frequent and intense will be the œdema due to imbibing tears or aqueous humour.

4. *Delay in the formation of the anterior chamber*:—If the graft is not properly fixed the wound remains open at some point which allows escape of the aqueous humour. This may also be caused by interposition of Descemet's membrane or cotton or silk fibre between the lips of the wound. Insufficient fixation may also produce intermittent gaping of the wound each time the intraocular tension reaches its normal limit.

5. *Anterior synechia*:—Adhesions between graft and the iris are the most dangerous of all complications of keratoplasty as it disturbs the graft and leads to opacity-formation or post-operative glaucoma. Delay in the formation of the anterior chamber or a traumatic gap of the wound favours this complication. A good incision and fixation by sutures is the most effective safeguard.

6. *Iris prolapse*:—This is not common but its consequences are serious and may be due to an insufficient fixation of the graft, a gaping of the wound and restlessness of the patient.

7. *Hypertension or secondary glaucoma*:—Faulty coaptation and insufficient fixation leads to delay in the formation of the anterior chamber and may cause iridocyclitis with hypersecretion of aqueous. This may cause increase in intraocular tension as soon as the cut in the cornea has healed up. Anterior synechiæ also fovour a rise in the tension.

8. *Opacification in the graft*:—The metabolism and nutrition of the graft may be endangered by faulty coaptation of the border of the graft and its bed or its displacement—thus leading to its opacification. In partial displacements of the graft, the ectatic area of the graft becomes opaque.

Thus we see that defective coaptation and insufficient fixation of the corneal graft is directly responsible for most of the post-operative complications which cause a delay in the normal healing process and even a failure in properly selected cases.

To obviate these complications, the graft has to border on cornea of normal thickness. There should not be much disparity in the thickness of the graft and the recipient cornea. In order to obtain a good section the trephine should be applied absolutely vertical and its rotating movements should be uniform and as much as possible in their amplitude while pressure is softly and uniformly brought to bear upon it. The cornea should not be stretched to complete the section to avoid an irregular section of the elastic Descemet's membrane. As soon as the anterior chamber is opened the trephine is withdrawn and section completed by Castrovijo's corneal scissors.

Suturing:—Suturing of the graft is very important to ensure success of corneal grafting.

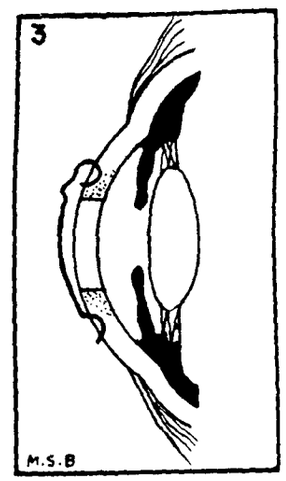

Fig. 3

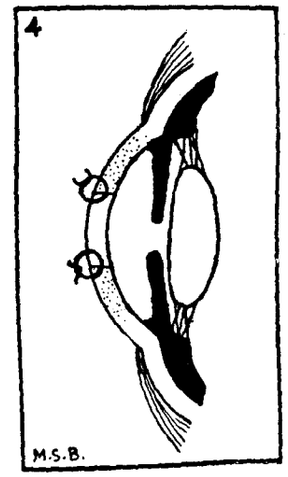

Fig. 4

Direct suturing of the graft (See *Fig. 4*) with fine silk six zero and extremely sharp 5 mm. needles (Grieshaber) with downward cutting edge (Barraquer), is the best.

The graft is fixed with a Hess forceps in such a way that only the anterior layers of the graft are taken in between its prongs. The suturing needle enters through the epithelial face of the graft quite near the fixing point of the forceps and goesout through the centre of its thickness, it penetrates exactly in front into the surface of its bed. I apply these two sutures at 12 o'clock and 6 o'clock and reinforce it with an overlay corneal suture (See *Figs. 3*, above and *5*, below) already applied to the recipient's cornea before completing the trephining of the leucomatous area. The graft bed is marked in the recipient's cornea by lightly rotating the Fransceschetti's corneal trephine lightly in the area and stained green with fluorescin. A thin corneal needle is inserted 1 or 2 mm. away from this stained line at 8 o'clock meridian and passed through the superficial layers of the cornea and allowed to emerge at 10 o'clock meridian then it is reinserted at 4 o'clock meridian and allowed to emerge at 2 o'clock meridian. This suture is laid aside so that it is not cut in subsequent steps of the operation. The trephining of the cornea is completed and the leucomatous disc removed and replaced from a similar disc obtained from the transparent donor cornea. The sutures are tightened and the operation completed.

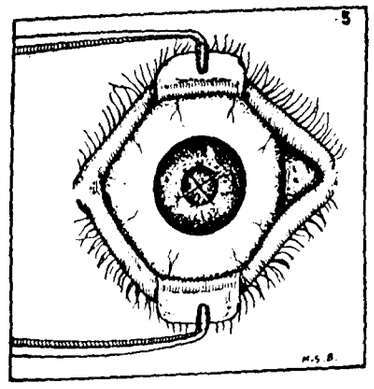

Fig. 5

Case history.—Mrs. P.B., Indore, Hindu female, 23 years of age was admitted in M. Y. Hospital, on 19-7-'58 suffering from

a band-shaped opacity in both eyes (See *photograph 1*):—Her visual acuity had gradually diminished to hand movements in the right eye and finger counting at two feet in the left eye. On 21-7-'58 I did a 5·5 mm. circumscribed penetrating (full-thickness) keratoplasty and applied the stitches as described above (See *Fig. 3, 4 and 5* on p. 897). After 15 days the stitches were removed and the patient was discharged cured on 21-8-'58.

The graft remained transparent and the visual acuity in the operated eye improved from hand movements only to 6/18 without glasses (See *photograph 2*).

Photograph 1
Before operation

Photograph 2
After operation

Summary.—Selection of cases and the role of proper coaptation and fixation by sutures is discussed as these three factors more than others influence the results of keratoplasty. A case is described in which the vision improved from hand movements to 6/18 in the operated eye without glasses.

Acknowledgement.—This subject was reviewed in our departmental symposium and in the I.M.A. meetings at Indore. My thanks are due to Dr. Bose, Principal, M.G.M. Medical College, Indore, Dr. Bhattacharya, Superintendent, M.Y. Hospital, and Prof. B. K. Dhir, Head of the Department of Ophthalmology for guidance, inspiration and facilities afforded and for according permission to utilize hospital records.

MANAGEMENT OF THE SECOND STAGE OF LABOUR

Beynon has pointed out that when instruction in pushing is omitted, bearing down is minimal until the fœtal head reaches the pelvic floor, when it becomes involuntary and forceful. But all too frequently the quietude and patience of the first stage is replaced by coercion to forceful effort as soon as full dilatation is achieved. Beynon therefore, pleads for a return to a completely spontaneous second stage, since normal delivery is achieved more quickly, more often and with less trauma than when an attempt is made to hurry it on.—(*J. Obstet. Gynacc. Brit. Emp.*, *64* : 815).

VIRAL ENCEPHALITIDES IN INDIA*

P. KUTUMBIAH, M.D.,
Vellore

GENERAL :—Encephalitis means inflammation of the brain, but when the brain is inflamed, the spinal cord is also involved, either primarily or secondarily. Hence the term encephalomyelitis is often used. Encephalitis is caused by physical means, chemical substances and infective agents. Infective agents may be protozoa, fungi, bacteria, spirochætæ, rickettsiæ or viruses. When encephalitis is caused by viruses it is known as virus encephalitides, and the viruses are referred to as neurotropic viruses. Neurotropic viruses attack chiefly the neurones, but they may affect other tissues also. There are degrees of neurotropism. Some are highly neurotropic *e.g.*, virus of poliomyelitis and of rabies while some are ordinarily neurotropic, *e.g.*, the virus of Japan B encephalitis.

The clinical picture depends on the area of the central nervous system damaged rather than on the type of virus involved. From the clinical picture alone it is difficult to diagnose the kind of encephalitis virus responsible for the outbreak. Laboratory help is needed.

Pathology.—The first evidence of injury due to the presence of a virus occurs, in most cases, in the neurones which react by degeneration or death. This is followed by an inflammatory reaction, neuronophagia, cellular infiltration around the blood vessels, proliferation of the glial cells, infiltration of polymorphs and mononuclear cells into the meninges and nervous tissue and areas of hæmorrhages and necrosis in the grooned substance of the grey or white matter. One sort of lesion may be more prominent in one type of encephalitis than in another. Variations in the lesions may occur. Similar pathological lesions may have different localizations in various encephalitides. It is impossible or very difficult from a pathologic examination alone to make a definite diagnosis of a particular type of encephalitis in an individual patient.

Classification of the encephalitides definitely known to be produced by an identified virus :-(1) C.N.S. infections caused by neurotropic viruses which invade along axonal pathways: Poliomyelitis and Rabies. (2) *Arthropod-borne encephalitides*:—St. Louis, Japan B, Australian X, Louping ill, and Russian far-eastern or tick-borne encephalitides. (3) *Encephalitides transmitted to man by direct contact with lower animals* :—B virus, lymphocytic chorio-meningitis. (4) *Encephalitides caused by viruses ordinarily non-encephalitogenic* :—Herpes simplex; lymphogranuloma venereum; mumps; measles; infectious mononucleosis. (5) *Encephalitides caused by viruses which are encephalitogenic* in

*Specially contributed to the ANTISEPTIC.

experimental animals but *as yet not definitely known to cause encephalitis in man*: Tropical viruses. (6) *Neurological maladies possibly having a virus aetiology*, but for which as yet no infective agent has been identified:—von Economo's disease; Gullien Barrie syndrome; Herpes zoster.

Four epidemics of viral encephalitides have been reported in the last 8 years; the poliomyelitis epidemic of Bombay, 1949; the Jamshedpur fever and the mysterious disease of Delhi, 1954; the Japan B encephalitis from North Arcot District, 1955; and the Kayasanur Forest Disease, Mysore State, 1951.

Jamshedpur fever.—First reported in May 1954 from Jamshedpur 690 cases of this disease were treated in the Tata Main Hospital, Jamshedpur. There were 54 deaths in this series. The age-incidence ranged from 1 month to 75 years. Najib Khna (1954) described four clinical types: (*Fulminating, toxic, dengue* and *abortive* types).

1. *Fulminating type*:—Occurred usually in infants and children under 10 years of age. Onset was sudden. Face is flushed and the fever high 104°F to 108°F. The child may vomit, develop convulsions, which to start with, may be localized but soon becomes generalized. Eyes are congested, in a fixed stare and the pupils are dilated. Rigidity of the neck and Kernig's sign are often positive. The deep reflexes initially are exaggerated, but plantar reflexes may be flexor or unequivocal, or in some cases extensor, on one or both sides. Rarely there may be trismus and a spastic type of hemiplegia. Death occurs as a result of marked respiratory failure. The mortality rate was high, being 74% in the hospital series.

2. *Toxic type*, occurs in children up to 15 years of age. Headache and marked paræsthesia of the skin occur in some cases. Some cases showed generalized adenitis which was tender. The mortality rate in this group was very low.

3. *Dengue type*, occurs at all ages. Generalized aches and pains and marked bradycardia are common. Relapses occur from 1 to 6 days after the original remission of fever. The mortality rate was almost *nil*. It was abortive usually in adults.

LABORATORY FINDINGS:—Marked leucocytosis, 10,000 to 46,000 with neutrophil response up to 90%. C.S.F. usually under pressure but otherwise normal cytologically and chemically. The sugar content both of C.S.F. and blood decreased to very low levels in the terminal phases in some.

The "*Mystery Disease*" of Lucknow and Delhi is supposed to be the same as Jamshedpur fever. On the basis of the available data, it was at first concluded that the epidemic was of virus-origin, and that the virus was related to the group of viruses causing similar epidemics in other parts of the world,

such as the Japanese B encephalitis, West Nile encephalitis, Australian encephalitis, etc. The first working hypothesis about the ætiology of Jamshedpur fever was that it was a virus encephalitis probably produced by an arthropod-borne virus. However, the extensive studies at the Virus Research Centre, Poona, showed that the disease cannot be attributed to an arthropod-borne virus infection. It is now believed that the encephalitis-like syndrome might be caused by an 'intestinal' virus which spreads from person to person in the same way as the poliomyelitis virus. Although the theory that a virus is involved in the ætiology of the encephalitis syndrome is widely held, the fact remains that no virus has so far been isolated.

The first indication that Japanese B encephalitis (J.B.E.) might be a serious problem was suggested by the results of a serological survey for anti-bodies against arthropod-borne viruses carried by the Virus Research Centre, at Poona. Neutralizing antibodies to J.B.E. were found in the sera of the residents of Trivellore and Kadambathur in the Chingleput District. This report was published in 1954. Drs. Webb and Sheila Pereira (1955) reported the occurrence of an arthropod-borne type of encephalitis in children in the North Arcot District, which adjoins the Chingleput District. In all, 16 cases were studied and investigated.

The clinical course of the disease may be divided into 3 stages. *Prodromal stage*:—General malaise, headache, and fever; duration 1 to 6 days. *Acute encephalitic stage*:—High fever, convulsions, stupor or coma and meningeal irritation. In half of the cases there were in addition focal signs of injury to the C.N.S. There were either upper motor neurone paralysis or disturbances of tone and posture or occasionally choreo-athetosis. *Late stage*:- When temperature and E.S.R. are normal and neurological signs are stationary or tend to improve.

LABORATORY FINDINGS.—Polymorph-leucocytosis was seen in the majority of cases 10,000 to 35,000. *C.S.F.* was clear, pleocytosis at sometime or other in the course of the disease is noted, 10 to 980 per cmm., mostly lymphocytic, and in some neutrophils. *Protein*: 20 to 90 mg.%. *Sugar* raised in some cases, the highest noted was 159 mg.%. *Chlorides* are within normal limits. *E.E.G.* is grossly abnormal. There is a diminution of electrical activity, dysrhythmia, and slowing.

Work and Shah (1956) who conducted an investigation into these cases report:—Virological and serological investigation of clinically diagnosed cases of virus encephalitis in children demonstrated serologically that the ætiology was a virus similar or identical to Japanese B. Although the ætiological virus has not yet been isolated, this is the first definite evidence that the Japanese B type encephalitis occurs in India. Both the clinical

and epidemiological features of the disease indicate that the infection is distinctly different from the Jamshedpur fever type of encephalitis in children studied in Northern India. Epidemiological investigations have shown that all cases studied came from rural homes in close proximity to rice fields under cultivation, where *Culex vishnui* was the most abundant type of mosquito. Preliminary investigations have failed to indicate any probable non-human vertebrate reservoir of the virus.

The third epidemic reported was the Kyasanur Forest Disease. In March 1957 it was reported that monkeys were seen to die in large numbers in the forest areas of the Shimoga district in Mysore State. In addition to these deaths in monkeys, cases of a febrile illness were occurring among human beings, sometimes with a fatal outcome. Viruses of a similar or identical type were isolated from diseased human beings and monkeys. This disease appears to be a new clinical entity, a new arthropod-borne virus disease in India and epidemiologically unique.

Clinical course:—Onset was sudden, with fever and headache occurring first followed shortly by back pain, severe pain in the upper and lower extremities, and severe prostration. Conjunctivitis occurs early in the disease. Non-tender lesions on the soft and hard palates, ranging from hæmorrhagic injection to a distinctive papular or vesicular eruption, often appear and is pathognomonic in a person who has a history of forest exposure. Enlarged and occasionally tender lymph glands may appear in the cervical, axillary, epitrochlear and inguinal regions, although this is not a constant finding. The heart and lungs are not generally involved. Pulse and respirations are proportionate to the temperature. The liver is not enlarged or tender, but the spleen may occasionally be palpable. Abdominal tenderness denoted gastrointestinal hæmorrhage. Neck stiffness, nuchal rigidity and occasionally Kernig's sign may be present.

Laboratory findings:—C.S.F. is colourless, cell count is within normal limits and protein, chlorides and sugar are not increased. Superficial and deep reflexes are not altered. Cranial nerves are not affected. It seems clear that the C.N.S. is not involved in this disease, a fact which is remarkable considering the serological relationships and the neurotropic nature of the causative virus in experimental animals. The fever lasts for 5 to 10 days. There is often a recurrence of fever for a few days. Marked asthenia and listlessness may last for a long period after apparent recovery. In the early stages of the disease there is invariably a marked leucopænia. Albumin, granular cysts and pus cells are found in the urine during the febrile stage, but clears up rapidly afterwards.

The main histological changes appear in the liver and kidney. The liver shows focal necrosis and bile stasis. In the kidney there is acute tubular degeneration in the proximal and collecting tubules of the kidney. Work *et al* who are doing the serological investigation consider that the ætiological agent belongs in the Russian Spring-Summer-Encephalitis (RSSE) complex of viruses. The lack of specific neurological signs in any of the patients so far observed in India and the tendency to hæmorrhage, particularly in severe cases, suggest that Kyasanur Forest Disease is to be placed among the hæmorrhagic fevers rather than in the encephalitis.

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ACNE VULGARIS–ITS ÆTIOLOGY AND TREATMENT*

D. B. BARAT, M.B., B.S. (pat.), D.T.M., D.I.H. (Cal.), P.M.S.,
Medical Officer, Ladra, Barabanki, U.P.

Acne vulgaris is characterized by the presence of greasy plugs or comadones on the forehead, face, back and chest, also known as blackheads. The mouth of the sebaceous orifice is plugged. "There is hardly any man or woman who had never had this condition at some stage of their adolescence" (Roxburgh, 1955).

Aetiology.—1. Predisposing Factors:—(*a*) *Age*:—Occurs at or soon after puberty in the ages of 16 to 20 years. (*b*) *Sex*:—Occurs in both sexes, but more males appear to suffer than females. (*c*) *Diet*:—People who take an excess of fatty and starchy foods are apt to suffer more. (*d*) *Anaemia*:—Anæmic condition is also a predisposing factor. (*e*) *Abnormal conditions*:—Like constipation, dyspepsia, septic teeth and tonsils may predispose to acne. (*f*) *Menstrual disorders*:—In people with irregular menstruation, acne vulgaris increases before the onset of each menstrual period. (*g*) *Hormonal imbalance*:—Androgens predispose to acne while œstrogens inhibit it. Increased keratinization is due to increased androgen stimulation. (*h*) *Emotional stress*:—It occurs largely in persons given to emotional stress.

2. Determining Factors:—*Seborrhoea*:—In seborrhœic condition pityrosporon malassez multiply and the individual becomes prone to acne.

3 Contributing Factors:—Staphylococcal infections in the case of the pustular form of acne, the bacillus of which is found in the pilo-sebaceous follicles. In the seborrhœic condition it multiplies enormously.

Treatment.—(*a*) *Diet*:—An excess of starch and fat in diet has to be avoided. (*b*) *Marriage*:—Often causes the disappear-

* Specially contributed to the Antiseptic.

ance of the lesions of their own accord. (*c*) *Cleansing of face* :—The face must be frequently cleaned with some good mild disinfectant soap and water in order to remove grease. (*d*) *Treatment for dandruff* :—Dandruff is caused by pityrosporon malassez. Scales on the scalp should be removed by soap or shampoo. The following prescription has been found to give good results.

℞ Resorcin	...	grs. xii
Hydrarg. perchlor	...	gr. ½
Aether	...	ℿ xii
Ol. Ricini	...	ℿ xii
Sp. Methyl	...	fl. oz. i

This is to be rubbed on the scalp once daily. No other hair oil should be used.

(*e*) *Menstrual disorders* :—Appropriate treatment for the particular disorder should be given. (*f*) *Treatment of intestinal condition* :—Constipation, dyspepsia etc. should be properly treated. (*g*) *Treatment of septic tonsils and teeth* :—The removal of septic foci and of any intercurrent infection is important. (*h*) *Vitamin A therapy* :—Vitamin A by injections and oral administration for a month is beneficial. (*i*) *Vitamin C therapy* :—Vitamin C twice daily for 3 to 4 weeks is also helpful. (*j*) *Treatment of anaemia* :—The anæmic condition should receive suitable treatment with liver and or iron preparations. (*k*) *In obstinate cases* :—Creosate in 5 minim doses in a capsule thrice daily, for a few days, after meals sometimes gives satisfactory results. (*l*) *Hormones* :—When all other measures fail, œstrogens and corpus luteum are advocated (Sahu, 1956), œstrogen therapy being indicated only in exceptional cases. The dose for males is 1 mg. daily for 6 to 7 weeks and for females, 0·5 mg. daily for 8 to 10 days after menstrual periods. (*m*) *Isoniazid* :—It has been observed (Srivastava, 1958) that INH in a dose 100 mg. thrice daily, is valuable in the management of acne vulgaris.

External applications.—(*i*) When there is hyperkeratinization—Lotio zinc sulphate should be applied externally. (*ii*) *In the simple type* :—Sulphur lotion or sulphur paste. (*iii*) Topical application of œstrogenic substances is also worth a trial.

℞ Calamine	...	grs. xxx
Sulphur ppt.	...	grs. x
Zinc oxide	...	grs. xxx
Glycerine	...	ℿ xxx
Soft paraffin	...	℥ i

This paste is rubbed locally, after washing the face with a good soap and warm water.

Physiotherapy.—(*i*) *Ultra-violet* :—Locally has been found to be helpful, particularly in pustular acne. The activity of the sebaceous gland is diminished (Venkatesan, 1953).

(*ii*) *X-rays* :—It is very useful in the treatment of obstinate cases of acne vulgaris. Pigmentation produced by X-ray disappears in 2 to 3 months' time.

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POSSIBLE BIOCHEMICAL EXPLANATIONS FOR UNSUCCESSFUL THIAMINE THERAPY IN NEURITIS*

B. P. CHAKRAVORTI, M.Sc. (Physiology), M.Sc. (Biochemistry),
Grant Medical College, Bombay

CONYBEARE and Mann[1] in their "Text-book of Medicine" state that "in the case of alcoholic neuritis, or any other form of the disease, when deficiency of vitamin is probable, or even possible, the patient should be given thiamine hydrochloride in doses of 20 to 50 mg. every day by intramuscular injection for several weeks, together with nicotinic acid 100 mg. thrice daily by mouth. Yeast and marmite may also be given. Unfortunately such treatment often produces no obvious improvement and with such a disease with such diverse causes as polyneuritis, it is not surprising that vitamin therapy with thiamine, so often appears to be ineffective."

Is it then possible that the rationale of thiamine therapy in the treatment of neuritis is not what has been postulated so far? In this paper I wish to offer a possible biochemical explanation for the ineffectiveness of thiamine therapy in neuritis.

Thiamine in diabetic polyneuritis.—In diabetes mellitus, the polyneuritis is due to non-oxidation of pyruvic acid, which is accumulated in the nervous system causing neuritis. In health, the pyruvic acid is oxidized normally in the system in the presence of the coenzyme, co-carboxylase, which is a pyrophosphate of thiamine (Diphosphate).

Co-carboxylase is isolated from yeast, and occurs in animal tissues. It can be synthesized, when thiamine is combined with sodium pyrophosphate and dehydrated phosphate. In diabetes mellitus, there is a high thiamine concentration in blood with low co-carboxylase. The formation of co-carboxylase is blocked in the absence of insulin,[2] because phosphorylation of thiamine with pyrophosphate does not take place in the absence of insulin. Siliprandi and Siliprandi,[3] showed in alloxan diabetic rats, a diminution in the blood sugar, an increase in the respiratory quotient and of tissue glycogen by the injection of co-carboxylase. However, in severe alloxan diabetic rats, thiamine fails to act because its conversion to co-carboxylase is prevented.

On the basis of the above findings, thiamine therapy was prescribed in neuritis. But it is now believed that the co-carboxylase activity in the oxidation of pyruvic acid is influenced by another important factor, called lipothiamide pyrophosphate.[4] It is a combination of lipoic acid with phosphoric acid and thiamine. In the absence of lipothiamide pyrophosphate, the co-carboxylase is not active enough to oxidize pyruvic acid.[5]

*Specially contributed to the ANTISEPTIC.

Summary.—The possible role of lipoic acid in the oxidation of pyruvic acid with the help of thiamine has been postulated. It is surmised that the unsuccessful results of thiamine therapy in severe diabetic neuritis may be due to the destruction of lipoic acid by ketones. The chemistry and properties of lipoic acid have been discussed.

Acknowledgement.—My grateful thanks are due to the Head of the Dept. of Physiology, Grant Medical College, Bombay, for according permission to publish this paper.

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IMPORTANCE OF DENTAL FOCI IN CARDIAC DISEASE

Focal infection continues to be a clinical problem, and this is especially true in cardiovascular pathology.

Muller's original definition implied that local infections produced, in separate organs or in the body as a whole, alterations of an inflammatory nature. The present trend is to replace the concept of inflammation by one of tissue reaction, and to distinguish between 'infective foci' with no clinical manifestations and 'foci of infection' accompanied by signs and symptoms of infection.

In cardiac disease there are pathological conditions directly related to septic foci, and the organs of circulation react even more to focal infection than to anxiety or emotional disturbance. To treat dental foci of infection effectively in the presence of cardiac or vascular diseases, it is necessary to establish the responsibilities of both the cardiologist and the dentist.

All dental foci of infection must be eliminated, and this radical approach applies not only to evident foci of infection but also to those that are just beginning, for it is then that they produce tissue reactions. All nonvital teeth eventually become septic foci.

No cardiac condition contraindicates surgery to remove the foci, but merely demands a study of when and how to extirpate them. Surgery should be done as soon as it can be without causing further complications in the patient. If removal will send bacteria into the bloodstream; it is advisable to administer large doses of antibiotics systemically and locally before, during and after surgery.

Tissue reaction such as rheumatic symptoms and bacterial allergies can be controlled by giving cortisone derivatives.

Finally, all local surgery on cardiac patients demands that preoperative sedatives be given by ingestion, and even injection, when necessary, to combat avoidable emotional tensions.—(*An. Espan. Odontoestomat, 16*: 507 via *Br. J. Cl. Prac.*, July 1958).

A CASE OF ANEURYSM OF THE TRANSVERSE ARCH OF THE AORTA MASQUERADING AS BRONCHIECTASIS

M. G. VARADARAJAN, M.B., B.S., D.M.R.,
Madras

CASE:—A., aged 37, married, cooly engaged in doing light work, came under observation on 30-1-'57 with the complaint of substernal discomfort for one year, and productive cough with much expectoration for the past nine months.

Family history:—Revealed nothing particular.

Personal history:—Patient had only one child aged five years and his wife who had no abortions or miscarriages is quite well. He is a non-vegetarian, not addicted to alcohol but drinks occasionally and smokes beedies.

Previous illness:—He gave a history of having had extra-marital exposures before marriage and had suffered from gonorrhœa; no definite history of sore penis was however, forthcoming. He was not definite about the age at which he contracted these diseases, for which he took indigenous treatment.

Present illness:—This started exactly twelve months ago with pain in the precordial region of a dull boring nature, increasing with exertion and getting worse at night. Three months later, he developed cough occurring in paroxysms. These were frequently induced by change of posture and were associated with the expectoration of large quantities of fœtid sputum, which amounted in the course of twenty-four hours to 20 or 25 ounces. The patient's breath was malodorous. On standing, in a glass vessel, the sputum separated in three layers; a surface scum of light frothy mucus, an intermediate stratum of thin, turbid greenish fluid and a deep layer of brownish colour consisting of muco-pus. Dyspnœa was not present. Finding no relief in indigenous systems of treatment, he reported to hospital.

On examination:—The patient was a fairly nourished individual of about thirty-seven years of age, not anæmic, not cyanosed, with no clubbing of fingers, no jaundice, no lymphatic glands palpable anywhere in the body, his tonsils and teeth being healthy and clean; his appetite was good and bowels regular. The pulse rate was 84 per minute; respiration 24 per minute and his temperature was 98·4°F.

Cardiovascular system:—Pulse-rate, rhythm, volume and tension were equal on both sides and were within normal limits. No abnormal pulsations were seen over the precordium or neck. Apex-beat was seen in the fifth intercostal space, half-an inch internal to the midclavicular line on the left side.

Palpation confirmed the position of the apex-beat and percussion revealed the heart-borders to be within normal limits. On auscultation, both the heart sounds were well heard in all the areas and there were no murmurs.

Respiratory system :—The trachea was deviated to the right; tracheal tug was absent. Both sides of chest moved well on respiration, equal in extent.

Palpation did not reveal any rhonchial fremitus; vocal fremitus was diminished in the left lower zone. Percussion revealed slight dullness at the left base and lower zone. On auscultation, there was diminished air entry over the left lower zone. Vocal resonance was diminished over the left lower zone. Adventitious sounds were present—leathery rales were heard in the left lower zone and scattered all over the right lung-field. The breath-sounds were vesicular in character but were weak over the left lower zone and in the right base.

C.N.S. :—Showed nothing abnormal.

Investigations.—The urine showed nothing abnormal; and there were no ova or cysts in the stools.

Blood examination :—V.D.R.L. Positive in 1 in 16 dilution; T.W.B.C. 8,400 per cmm.

Differential count :—Polymorphs 60%; lymphocytes 30%; eosinophils 8 per cent, and monocytes 2 per cent.

E.S.R.—Half-an-hour 6 mm.; one hour 12 mm.

Blood-pressure :—Right upper limb 118/76 mm.; and left 120/80 mm. Right lower limb 150/90 mm. and left 150/90 mm.

Fluoroscopy.—1-2-'57. Trachea was deviated to the right. Heart borders were not enlarged; shadow of ascending aorta enlarged and aortic knuckle prominent with pulsation; aneurysm of transverse part of the aortic arch (?)

Left oblique :—There was prominence of ascending and arch of aorta.

Right oblique position :—Clubbing effect of aortic knuckle.

Barium swallow and screening :—In A.P., right oblique and left oblique views, the œsophagus showed elongation and displacement to the left of the aortic arch: impression, marked in the A.P., and left oblique views.

The sputum was repeatedly negative for A.F.B. on three consecutive occasions, but was three layered and had a slightly offensive smell.

Fundus :—N.A.D. *E.N.T.*—N.A.D.

Diagnosis :—Aneurysm of arch of aorta (transverse part) was made (?) and the patient was put on penicillin (P.A.M. 600,000 units daily intramuscularly for twenty days from

24-2-'57 to 14-3-'57 and bismuth one cc. twice a week with a total of ten injections; (this was completed as an out-patient).

He was discharged and asked to report after three months which he did on 24-6-'57.

He had cough associated with expectoration of large quantities of very offensive sputum; cough occurred in paroxysms induced by a change of posture. The treatment he received previously, had not produced any appreciable improvement in his cough.

On examination of the respiratory system, the positive findings were :—

Palpation revealed vocal fremitus diminished over the left lower zone. Percussion revealed dullness in the left lower zone. On auscultation the breath sounds were weak over the left lower zone to a marked extent and to a slight extent on the right base. Coarse rales were heard all over the parenchyma of the right lung and left lower zone. The patient was slightly dyspnœic on exertion.

28-6-'57 :—An X-ray of the chest was taken on 28-6-'57 of the lung-fields and heart. (See *Fig. 1*, below), P.A. view. Trachea was found shifted to the right. Prominence of ascending aorta and aortic knuckle prominent, slightly shifted upwards and pushed more to the left of the middle line than usual.

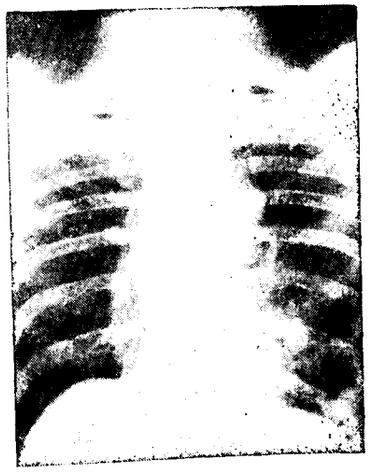

Fig. I. 28-6-'57. P.A. view of chest for lung-fields and heart.

Fig. II. 28-6-'57 Oesophogram. Right anterior oblique view.

Lung fields :—Changes suggestive of bronchiectasis marked in the left lower and middle zones and to a slight extent noticed in the right base (may be due to bronchitis also) were visualized in the parenchyma of the lungs.

Right oblique and left oblique positions :—Pressure on the trachea was evident and also on the left bronchus by the

enlarged aneurysmal sac in the transverse part of the aortic arch. This was brought out very well in the right oblique view.

Oesophogram.—Showed elongation and displacement of the œsophagus to the left of the aortic arch impression, seen best in the antero-posterior and left oblique views. (See *Fig. II*, p. 911). In the right anterior oblique view, there was stasis of barium in the œsophagus at the level of aortic arch and also at the level of the left bronchus.

Fluoroscopy showed pulsation of a soft-tissue swelling in connection and continuity with the transverse part of the aortic arch. The total quantity of sputum was 120 ounces during twenty-four hours. On 25-6-'57, the E.S.R. was 88 mm.—one hour.

On 4-7-'57 (See *Fig. III* below) a bronchogram revealed bronchiectasis in the left mid-zone and non-filling of the left lower zone with oil. V.D.R.L. was positive 1 in 16 dilution. On 5-7-'57 :-Larynx was normal. 7-7-'57 :-Resting juice from stomach (gastric juice) for A.F.B. negative ; T.P. skin test was negative on two occasions ; 8-7-'57 :—Bronchoscopy of left bronchus was severely congested and plenty of discharge was present.

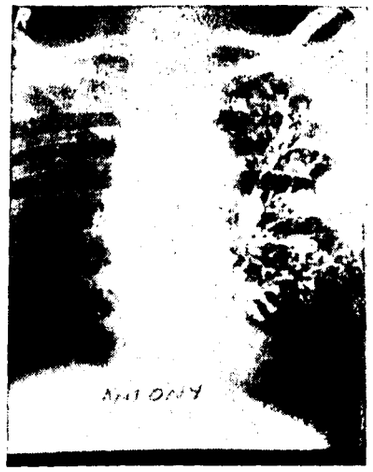

FIG. III. 4-7-'57
Bronchogram P.A. view.

FIG. IV. 27-5-'58
P.A. view chest. For lungs and heart. Showing aneurysm of arch of aorta ; bronchiectasis in left lung and bronchitis in right lung.

TREATMENT :—Strepto-penicillin, 1·0 g. per day, intramuscularly for forty injections along with postural drainage and sedatives for cough from 29-6-'57 to 9-8-'57 did not produce any improvement in the cough and expectoration of large quantities of sputum and hence the patient was discharged and advised to report after three months, which he did on 27-8-'58. (*P.A. view of chest for lungs and heart*). (See *Fig. IV* above).

On examination, he showed progressive changes in signs and symptoms, pointing to a clinical diagnosis of bronchiectasis more on the left side and chronic bronchitis on the right side and roentgenological examination of the chest for lungs and heart not only confirmed the findings made earlier but also showed further changes pointing to a diagnosis of aneurysm of the aortic arch mainly involving the transverse part and the changes in the parenchyma of the lungs secondary to a lesion in the aorta. (See *Figs. V and VI* below).

FIG. V. 27-8-'58.
Left lateral view of chest. Showing pressure on trachea and left bronchus by aneurysmal sac in arch of thoracic aorta. Bronchiectasis in left lung.

FIG. VI 27-8-'58
Oesophogram. Right anterior obliquo. Showing stasis of barium in œsophagus slightly above the level of aortic arch and deepening of left bronchus impression on œsophagus due to pressure by aneurysmal sac in the transverse arch.

Discussion.—When the patient first reported with productive cough with expectoration of large quantities of sputum and substernal discomfort, a diagnosis of bronchiectasis was made on clinical grounds ; findings at fluoroscopy were given very little credence to establish a diagnosis of aneurysm of the transverse part of the aortic arch and the bronchiectasis secondary to it. Skiagrams were not taken to confirm the fluoroscopic findings and thus an attempt to establish an early diagnosis of cardiovascular syphilis was missed. In the course of routine history-taking, the patient gave a history of sore penis and discharge per urethra and a V.D.R.L. positive, one in 16 dilution prompted the sending of the patient to the venereal department where penicillin was administered on an equivocal evidence of vascular syphilis. Anyhow the utter failure to evoke any response from or give relief to the patient either in the amelioration of the cough or in the reduction of the large

quantities of sputum, prompted caution that it was not a case of simple bronchiectasis which was most probably only secondary due to an irreversible cause. When the patient again reported on 28-6-'57, the diagnosis was very obvious on roentgenological examination supplemented by careful bronchoscopy. When the patient again reported on 27-8-'58, it was only for a confirmatory follow-up and also for ascertaining the progress of the lesion.

It should be borne in mind that the symptoms and signs of saccular aneurysm are related very closely to the anatomic point of origin of the sac from the thoracic aorta and the direction in which it points. The aorta consists of a thoracic and an abdominal portion. It begins at the upper part of the left ventricle and after ascending for a short distance, arches backwards and to the left, over the root of the left lung; it then descends within the thorax on the left side of the vertebral column, and enters the abdominal cavity through the aortic opening in the diaphragm. It ends, a little to the left of the median plane, at the level of the lower border of the fourth lumbar vertebra, by dividing into the right and left common iliac arteries. It is described in several portions *viz.*, the ascending aorta, the arch of aorta and the descending aorta, the last being divided into the descending thoracic and abdominal aortæ. According to text-books on anatomy, the thoracic aorta is described only as two portions *viz.*, the ascending aorta and the arch of the aorta. The ascending aorta is about five cm. long. It arises from the base of the left ventricle on a level with the lower border of the third costal cartilage, behind the left half of the sternum. It runs at first upwards, forwards and to the right as far as the right border of the manubrium opposite the second costal cartilage. Then the vessel forms an arch by turning backwards and to the left until it reaches the left side of the body of the fourth dorsal vertebra where it turns downwards and becomes the descending thoracic aorta. Thus the arch of the aorta connects the ascending with the descending aorta. The arch of the aorta is directed backwards and to the left but the principal inclination is backwards. At its commencement it is separated from the right half of the manubrium only by the thin anterior margin of the right lung and pleura but at its termination it is deeply placed.

Kampmeier (1943) divides the thoracic aorta into the ascending arch, the transverse arch, the descending arch and the descending thoracic aorta. The ascending arch is that segment of the arch between the aortic valve and the origin of the innominate artery and lies fairly close to the anterior chest wall. The second portion of the arch lies transversely in the mediastinum and is intimately related to the œsophagus, trachea,

left bronchus and left recurrent laryngeal nerve. The descending arch is that part of the arch lying to the left of the third to sixth dorsal vertebræ adjacent to the œsophagus and left bronchus. The descending thoracic aorta extends from the sixth dorsal vertebra to the diaphragm.

The symptoms and signs in saccular aneurysms of the thoracic aorta are dependent entirely upon the fact that the expanding tumour presses upon some structure. The anatomic structure thus involved determines to a large extent, the clinical picture and may give rise to very interesting diagnostic problems. Osler observed "There is no disease more conducive to clinical humility than aneurysm of the aorta. It offers many interesting problems ranging from the "silent" cases found by pure chance upon the roentgenogram to the most bizarre clinical pictures." However the presence of an aneurysmal sac may be suspected or diagnosed on the basis of a proper evaluation of the patient's symptoms and signs in most instances.

The ascending aorta and the arch of the aorta are frequent sites of the aneurysm. Structures or organs which may be pressed upon are the trachea, major bronchi, lungs, œsophagus, pulmonary artery, vagus, sympathetic nerves, right laryngeal and left recurrent laryngeal, intercostal nerves and rarely the diaphragm.

If the clinician will keep in mind the relationship of the aorta to the various intra-thoracic organs, the symptoms and signs will be clear. A sac of the ascending arch is spoken of "aneurysm of signs," that arising from transverse arch, is called 'aneurysm of symptoms.' Aneurysm of the descending portion of the aortic arch is less common and is rare in the lower thoracic portion comparatively. In the latter site, an aneurysmal sacs are often 'silent' giving rise to neither symptoms nor signs even though they may be the size of a large grape fruit. Aneurysms at this site give the clinician his greatest surprises when he is confronted by postmortem or roentgenologic evidence of such an unsuspected tumour. Under such circumstances, mixed clinical pictures may appear.

It must be sufficiently appreciated that one of the ways in which an aneurysm of the aorta may masquerade is in the form of a chronic pulmonary or pleural infection. Indeed these complications may be so prominent that they completely dominate the clinical picture. Of the 4000 cases of aortic aneurysm collected by Boyd (1924) the incorrect diagnosis that had been made in 130 were summarized, in about half of these cases the diagnosis was some form of pulmonary or pleural infection. Among the conditions mentioned were pulmonary tuberculosis, asthma, chronic bronchitis, pleural effusion, pleural empyema,

pericarditis, pleurisy and abscess of the lung. In twenty-two cases observed by Mallory and Keefer (1935), all these conditions occurred and in addition hæmothorax, bronchiectasis, atelectasis and rupture of the aneurysm of the lung. There were eight cases in which one of the main bronchi was compressed. In seven the left bronchus was involved and in the other, the right bronchus. The commonest group of symptoms cough and dyspnœa met with in aneurysms of the ascending aorta and transverse arch, are due to pressure on the trachea or bronchi. Tracheal compression alone is the most common cause of chronic cough. Pressure on the trachea or large bronchi is responsible for the bronchitis and dyspnœa. As has been stated already, the symptoms of aneurysm result from pressure or erosion either of osseous or soft structures or both probably the most frequent symptom of pressure is that upon the trachea. Pressure upon the larger bronchi is often present and while this may not be seen directly, its secondary effects are visible in the form of bronchostenosis, bronchiectasis or pulmonary abscess. Pulmonary changes are often so marked that they have been aptly designated "aneurysmal phthisis."

Tracheal compression usually results from pressure on the trachea by an aneurysm of the innominate artery or of the transverse arch of the aorta or descending arch of the aorta, more common with the aneurysmal sac in the transverse arch. In most cases of bronchial compression the aneurysm arises from the descending arch of the aorta. This was not difficult to understand when one appreciates that one of the most common sites for aneurysm to occur is at the point where the aorta passes over and above the left main bronchus. Partial occlusion of a bronchus by compression is not an infrequent cause of bronchiectasis and an aneurysmal sac may be the occlusive agent. This is usually unilateral and the picture may be that of typical bronchiectasis. The sequence of events are as follows—The symptoms produced by bronchial compression are cough, expectoration, stridor, dyspnœa, attacks of suffocation. At first when the obstruction is incomplete, there is emphysema of the left lung. Later, when secretions are retained distal to the obstruction there appear varying degrees of collapse of the lung with or without pneumonia, acute or organized abscess or bronchiectasis. Once the infection becomes marked the patients have symptoms of a suppurative pulmonary lesion with fever, loss of weight, sweating, and other constitutional symptoms accompanying a chronic infection ; death may ultimately ensue.

Bronchoscopy is important in assessing the state of the trachea and its mucosa, the site of tracheal obstruction whether such was pulsating and the character of any bronchial secretions. It also provides direct evidence of the increase of tracheal lumen

following successful wiring of the aneurysm. Endobronchial pulsation *per se* is not diagnostic of aortic aneurysm ; it is sometimes seen in patients suffering from bronchial carcinoma.

The amount of tracheal narrowing or deformity is no guide to imminence of rupture into the trachea. Bronchoscopy is not without danger ; if not carefully done it may end fatally due to a rupture of the aneurysm.

Thus the case reported here, furnishes one more example of an unilateral bronchiectasis on the left side and chronic bronchitis on the right side, mainly a pulmonary lesion due to pressure or incomplete block on the left bronchus and pressure on the trachea or on right bronchus by the aneurysmal sac in the transverse arch of the aorta, dominating the clinical picture. It looks as if the aneurysm involves mainly the posterior part of the vessel. Since there is evidence of pressure on the trachea as well as on the left bronchus, it is possible for the aneurysm to be involving both the arches of trnsverse and descending segments of the thoracic aorta, as described by Kampmeier. This can be confirmed or disproved definitely on the post-mortem table only. This case emphasizes not only the difficulty of diagnosis of aneurysm of the transverse arch of the thoracic aorta in the presence of the above-mentioned complication but also it acts as a pointer that aneurysm of the thoracic aorta should be entertained in any case of obscure pulmonary or pleural infection.

Another interesting feature observed in this case is due to œsophogram. It is usually described in text-books "aneurysms of the transverse arch are best portrayed with the aid of œsophogram which shows both elongation and displacement to the right of the aortic arch impression ; this shows best in the anterior and left oblique radiograms. The trachea is deflected in the same way." In this case, the trachea was displaced to the right of the aortic arch impression but the œsophagus was displaced to the left of the aortic arch impression, marked in antero-posterior and left oblique positions.

Summary.—A case of aneurysm of the transverse part of the aorta masquerading in the form of a pulmonary lesion, with the variation in œsophogram is reported.

Acknowledgement.—I am very much indebted to Dr. R. V. Rajam, M.B., B.S., M.S., F.R.C.P., F.R.S., and Dr. P. N. Rangiah, M.D., The Institute of Venereology, Government General Hospital, Madras, for affording me an opportunity to study this case.

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MALIGNANT NEOPLASMS OF THE NASOPHARYNX

A. T. GEORGE, M.B., B.S., L.R.C.P., F.R.C.S.E.,
E. N. T. Surgeon, Irwin Hospital, New Delhi.

THE most commonly occurring malignant neoplasms of the nasopharynx are carcinomata. In the great majority of cases, they consist of immature cells, capable of rapid proliferation, with a tendency to early metastasis, the more anaplastic ones being the more markedly radiosensitive. Thus, we find squamous celled carcinomata of which some are highly differentiated, while some are very anaplastic. Between these two extremes, tumours of varying grades of differentiation are met with. Some are lymphoepithelioma, others are transitional-cell carcinoma. Less commonly are found reticulum-cell sarcoma, lymphosarcoma, plasmocytoma and obordoma (*sic*).

SITE OF ORIGIN.—The common sites from where the tumours arise are the roof of the nasopharynx, and the lateral walls in and adjoining the Fossa of Rosenmuller.

SYMPTOMS AND SIGNS.—These depend upon the site and size of the growth, involvement of neighbouring structures, and the direction of extension of growth. Accordingly the signs and symptoms may be divided into the following groups:—(1) cervical adenopathy; (2) nasopharyngeal; (3) otological; (4) orbital; and (5) neurological. The very early stage before any of these symptoms appear, may be called "*The silent stage.*"

(1) *Cervical adenopathy*:—Most of us have come across patients with swellings in the upper part of the neck on one or both sides. On palpation, the swellings are found to be due to enlarged lymphatic glands. The glands involved are the uppermost of the deep cervical group situated under the upper part of the sternomastoid. In such cases, the possibility of a primary growth in the nasopharynx should always be kept in mind. The primary growth is sometimes easy to detect. At other times it is liable to be missed. For a proper examination of the nasopharynx, the post-nasal mirror is necessary. The electric nasopharyngoscope is also of assistance. If necessary, the patient should be put under general anæsthesia and a thorough digital examination carried out. It should also be remembered that the size of the secondary cervical glands may in some cases be out of proportion to the size of the primary in the nasopharynx.

(2) *Nasopharyngeal*:—There may be unilateral or bilateral nasal obstruction depending on the size of the growth. Mucopurulent nasal discharge is present, sometimes blood stained; or there may be episodes of epistaxis. If the growth extends further down towards the oropharynx, it may interfere with the movements of the soft palate. There may be rugurgitation of fluids or disturbance of speech.

(3) *Otological*:—Here the symptoms are attributable to direct pressure on the eustachian orifice. The patient may complain of stuffiness in the ears, tinnitus, or deafness. Secondary infection of the middle ear may result in otitis media with its complications. Occasionally the tumour may grow along the eustachian tube and invade the middle ear, and may be seen in the external meatus.

(4) *Orbital*:—Involvement of the orbit may be unilateral or bilateral depending on the size and direction of extension of the growth from the nasopharynx. It is accompanied by diplopia, proptosis, and ophthalmoplegia due to the involvement of the 3rd, 4th and 6th cranial nerves.

(5) *Neurological*:—The patient may complain of numbness of the face either maxillary or mandibular region, or persistant dull ache or neuralgic pain referred to the frontal region upper and lower teeths or ears. These are due to involvement of the 2nd and 3rd divisions of the trigemenial nerve. A review of the anatomy of this region explains how the growth may extend through the foramen lacerum or into the pterygomaxillary fossa or deep temporal region, through the fossa of Rosenmuller. If the growth invades the jugular fossa, the 9th, 10th and 11th cranial nerves may be involved. In fact a number of syndromes have been described, indicating the involvement of particular cranial nerves with corresponding paralysis, anæsthesia, pain and neuralgia. According to Trotter, deafness, neuralgia and defective movement of the palate are the cardinal symptoms.

The importance of radiological studies has been stressed by certain authors, who advocate lateral, basal and axial views and stereoscopic studies. If osseous changes in the skull bones are detected, this will help in diagnosis. Lateral skull films or mentovertical views may show abnormality in the nasopharyngeal airway. A lateral tomogram may show obliteration of air space more clearly than a straight lateral film.

TREATMENT:—As surgery has little to offer, we have to depend mainly on radiotherapy. Even in radiotherapy the results are not very encouraging, but on the whole it may be said that the more anaplastic varieties and the sarcomata have relatively better prognosis.

Wilson recommends that parts of the hard and soft palates may be removed and a window created so as to introduce radium on an applicator attached to a denture. The window can be closed with a dental plate.

CASE I:—N., X., Hindu, male, aged 50 years, was admitted with the following complaints and history. Swelling in the throat and gradually increasing dysphagia for the last two months. Nasal obstruction more marked on the left side, left sided deafness and difficulty in speaking.

Examination showed a rounded swelling about the size of a lemon, situated in the nasopharynx more towards the left side. On palpation the tumour felt firm in consistency. No ulceration was seen. Nose showed mucopurulent discharge. No epistaxis; no cervical glands palpable and no involvement of cranial nerves. X-ray showed no bony lesions.

Biopsy report.—*Lymphoblastoma:* He was treated with deep X-ray and has so far received 2800 *r* on each side. The tumour has responded well to the treatment, and has practically disappeared except for a small remnant in the region of the fossa of Rosenmuller. The patient is still under treatment.

Case II:—P., Hindu, male, aged 60 came in with a history of swelling of the upper part of the neck for the last 6 to 7 months, nasal obstruction, and epistaxis on and off for the last one year, loss of hearing (Rt) and general debility. Examination showed enlarged hard lymph glands of the upper deep cervical group. A non-ulcerating mass was visible in the nasopharynx pushing down the soft palate.

A polypoid growth was seen in the right nostril which bled on manipulation. No cranial nerve palsies were present. X-rays showed no bony lesion.

Biopsy.—*Reticulum cell sarcoma*:—The patient was given deep X-ray therapy and has so far received 2600 *r*. The naso-pharyngeal growth has regressed to about 1/3 of the original size. The secondary glands have responded only slightly.

Acknowledgement.—My thanks are due to Dr. B. L. Taneja, Med. Supdt., Irwin Hospital for permission to use the hospital records pertaining to the cases reported herein.

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FACTS ABOUT THE OBESE

Careful, painstakingly conducted, and repeatedly confirmed investigations have shown that:

1. The obese have no defect in basal metabolism that can account for their obesity.
2. The obese have no defect in metabolism that permits them to perform work on less energy than normal people. On the contrary, the obese have a lessened mechanical efficiency, and require a greater energy expenditure than normal people to do the same amount of work.
3. The obese have no defect in specific dynamic action.
4. The obese absorb no more calories from the food they eat, than normal people do.
5. The obese have no disorder of the endocrine glands to account for the overweight.—(*Current Medical Digest*).

REPORT ON A CASE OF MEDIOTARSECTOMY

DOTT. ELIO MOFFA,
Retired Chief Surgeon, Civil Hospital, Kupang-Timor, Indonesia

THIS is a report of a case of mediotarsectomy which I performed in Indonesia; and I present it in order to show that it is possible also in the Tropics to carry out such daring operations requiring considerable patience and calmness.

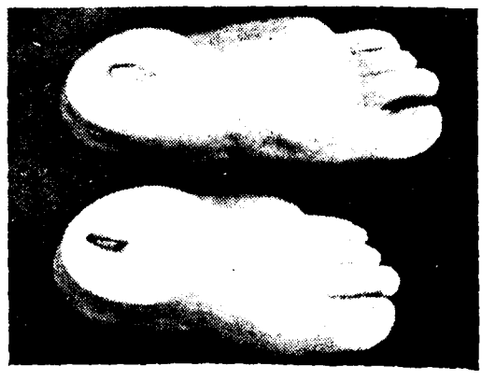
This operation was performed by me on a Dutch Catholic Missionary of Endes (Flores) at Kupang (Timor) while I was Director and Chief Surgeon of the Civil Hospital.

Case Report.—B.P.L., aged 45 years, a normal healthy and robust subject. Family and past personal histories were completely negative. Only in 1942, as a result of the War, the patient lost the 5th toe of the left foot and suffered from a complete comminuted fracture with retention of metallic splinters affecting the bones of the mediotarsus, which set up a form of osteomyelitis which flared up from time to time, with the opening of fistular sinuses, always on the back of the foot. The above mentioned osteomyelitis had been in its silent phase for over a year. Surgeons previously consulted advised amputation, which the patient refused to submit to.

On admission to the Kupang Civil Hospital, he was found on objective examination to be :—of the normal type, an extremely healthy person with only a moderate muscular hypotrophy involving the left leg. The left foot was seen to be greatly deformed with the disappearance of the internal plantar arch, and showing the classical form of "flat foot." There was also a marked deformity involving the external slope of the back of the foot, which was mis-shapen and knotty in appearance. There was nothing involving the skin of the sole of the foot while, the skin of the back was red, shiny, thin and adherent, with many hyperpigmented lenticular zones residue of the preceding fistular sinuses. There was also an increase in the local temperature, and palpation of the whole of the mediotarsal area was fairly painful, and the whole of the left leg showed a marked hypotonia. The left tibiotarsal joint was almost completely rigid with very limited active and passive movements; also the extension movements of the toes were limited and painful, as the extensor tendons were certainly engulfed by the osteomyelitic process. Normal walking was impossible, as the patient found it extremely difficult to place the affected foot on the ground; he therefore used crutches.

A study of the reproduction of the plaster cast—the upper one (*in photographs 1 and 2*, see p. 922) will give an idea of the condition of the patient's foot.

The radiogram (*No. 1*, below) was taken with a portable apparatus before the patient's admission to hospital. Though not



Photograph 1

Photograph 2

very clear, it still shows the complete disappearance of the articular interlines involving the various metatarsal bones which have lost their opacity and their characteristic formation. In spite of the fact that many surgeons in Europe who were consulted had advised amputation as the only remedy, in view of the fact that the patient's condition was excellent, that the osteomyelitis had been silent for a year, and that all the tests carried out on him gave normal results, I decided that a radical demolition operation was not necessary, and that a partial demolition operation would be sufficient–*i.e.*, mediotarsectomy, following with some modifications, the mediotarsal resection by the combined external and internal routes according to Andre Richard, the technique of which is described on page 1031 of Volume I of the "*Traite de Technique Chirurgicale* by Quenu, Masson Ed. 1942-44.

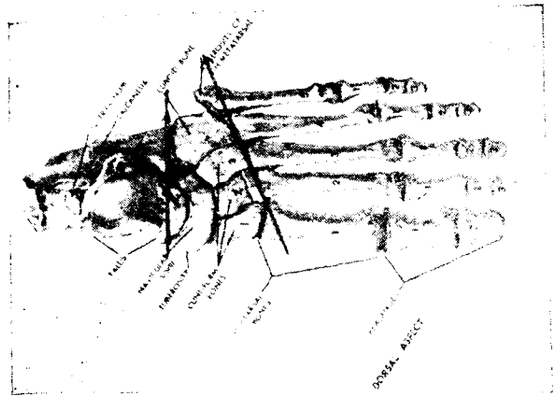
Radiogram 1

I closely followed the same procedure in carrying out radical and complete removal of all the osteomyelitic foci, in freeing the extensor tendons of the toes, and in reconstructing the normal architecture of the foot, and thereby restoring the foot to its normal condition and function. I did not consider it advisable to operate by the dorsal route, as generally advised, because, although this route is the most logical and direct, the whole operation will have to be carried out through an infected zone, *i.e.*, starting from the skin, as all the fistular sinuses had

come through the skin of the back of the foot. Furthermore, in order to have an exact view of the true extent of the osteomyelitic process, I would have had to resect the extensor tendons of the toes leading to successive tenorraphy which was to be avoided, as it would involve working in a previously infected zone. I therefore followed Andre Richard's method of resection with a few modifications.

The operation was carried out on August 16th, 1956, under spinal anæsthesia and a hæmostatic curtain:—"External lateral incision. The tendons of the toes were very carefully freed by means of an internal lateral incision. It was thus possible to obtain an exact view of all the osteomyelitic focus, so that the necessary resection could be carried out; in fact, in order to reach a definitively healthy zone it was necessary to perform a cuneiform resection of all the mediotarsus, thus removing the scaphoid, cuboid and cuneiform bones and attacking the anterior articular surfaces of the astragalus and of the calcaneus on the one hand and the posterior extremity of the five metatarsal bones on the other.

Local medication with 1 gr. streptomycin and ten lakhs units of penicillin was given. By trephining, the osseous extremities were sutured to the two sides with catgut and completed with periosteal suture, using separate stitches. The various layers were sutured with catgut and a modified cutaneous suture was made, using catgut and separate stitches. Very extensive medication was resorted to and at the end, the patient had a plaster of Paris immobilizing half boot cast with the foot placed at a right angles, keeping the concavity of the plantar arch".



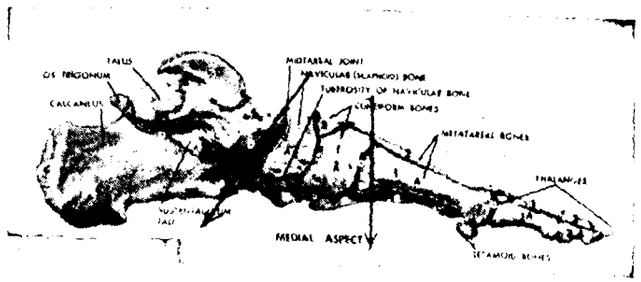
Drawing No. 1

During the operation everything possible was done to remove the bony portion in one block, which was made possible because all the bones removed had lost their normal shape and their articular surfaces and were all fused in a single spongy mass.

For further details, the reader is referred to the technique used by Quenu. (loc. cit.)

I made certain changes because, I found that I had to carry out a more radical and extensive operation, *i.e.*, a true and

proper mediotarsectomy rather than mediotarsal resection (See *drawings No. 1*, p. 923 *and 2*, below).



Drawing No. 2

A. Medial component of anterior arch. B. Lateral component of anterior arch. C. Posterior segment of longitudinal arch. D. Cartilage.

Finally, the cutaneous suture at both sides, instead of being arciform, was carried out in the vertical direction, along the central tract, so that the resulting scar was an upturned Y. This was due to the fact that although, after performing the resection, a greater cutaneous surface was available, I was not sure about the trophism of the skin at the back of the foot, because it was greatly altered by the preceding infection.

After the operation, I scrupulously followed the post-operative treatment outlined by Quenu; *i.e.*, I freed the toes and made a longitudinal cut, 3 cm. wide, corresponding to the anterior face of the neck of the foot and on the posterior 4 (*sic*) of the back of the foot. Post-operative progress was apyretic. Immediately after operation, the extensor movements of the toes reappeared. Normal analgesics were given for the first few days and by way of abundant caution I gave 1,000,000 units of penicillin during the first five days and a further 500,000 units for the following five days. The foot was always kept in a raised position and under a cage with 5 radiant heat lamps. I was able to observe the state of the skin at the back of the foot through a slit which I had previously made for the purpose. The plaster of Paris cast was kept on for six weeks and not for two months, because I noted an alteration involving the skin of the back of the foot, whilst the radiograms carried out during this period always showed the bones to be placed together in a good position.

On October 1, 1956, the plaster cast was removed and it was observed that the skin in the centre of the back of the foot showed a dark brown zone with distinct lines of demarcation from the surrounding skin which was perfectly normal.

A new plaster of Paris cast was immediately made, this time leaving a window slightly longer than a necrotic zone and the foot was kept under a heated cage and treated daily with dry penicillin medication. After 20 days, *i.e.*, on 20-10-1956,

as the dry necrotic zone did not show any signs of diminishing, it was easily cut away and then it was found that the wire affected only the skin and the subcutaneous cells and stopped at the superficial dorsal aponeurosis which was easily foreseeable, as the extensor movements of the toes had become almost normal.

Daily dry medication with penicillin powder was given. During this period the patient did not suffer from any fever or inguinal adenopathy. The only observation made at this time was that the raw patch which was completely dry at first, began to secrete a little. No signs of granulation were noted on the part of the margin of the healthy skin which was distinctly separate like two different steps. A few granulations involving the slightly secreting background were observed.

On November, 8th, 1956, a Tierch dermo-epidermal graft was carried out under short Pentothal anæsthesia, the graft being taken from the anterior zone of the right thigh. This occasion was availed of to remove the cast and to make a direct radiogram. Finally, a third cast was made, also with a dorsal opening, so that the area of interest could be checked and treated. Inspite of the fact that this graft was carefully performed, it was rapidly absorbed, leaving the surface of the deep tissue and the margins in their original condition.

On December 4th, 1956, a new Tierch dermo-epidermal graft was made under local anæsthesia; this time the graft was taken from the anterior zone of the left thigh. However, it was seen that a single graft could cover the whole of the raw patch, and before placing the dermo-epidermal graft in contact with the said zone, it was immersed in a highly concentrated oily solution of Vitamin A. Care was also taken to perform, during the first week, an intra-arterial injection (in the left femoral artery at the level of the groin) of 500,000 units penicillin dissolved in physiological saline. The area was treated daily with the powder taken from two chloramphenicol capsules and with 150,000 units of vitamin A in oily solution; these applications were made twice-daily for the first five days and then once daily for a second five-day-period. By these means the graft took perfectly well and became entirely fixed.

On December 14th, 1956, the third plaster of Paris cast was removed and in view of the fact that successive radiograms revealed a very satisfactory state of affairs, a cast of the walking type was fitted.

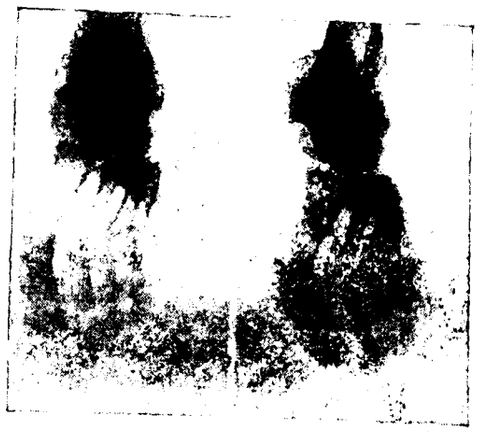
The occasion was taken to make a plaster cast of the entire sole of the foot which was then used to make a wooden form which was applied to the definitine walking cast fitted on December 21st, 1956 as the graft had taken well, although under strain and without medication. The patient therefore, left the hospital cured, on December 23rd, 1956.

During the four months the patient was in hospital without ambulation, he was kept in activity with gymnastic movements, either in bed or in his wheel chair; so the left leg was completely painless and walking was immediately possible.

On January 20th, 1957 after approximately 5 months, the plaster of Paris cast was finally removed, so that on February 4th, 1957, it was possible have a control radiogram which showed a complete disappearance of the osteomyelitic focus and the presence of the astragalus and of the calcaneus in good position on one side, and of the 5 metatarsals on the other (*See radiograms 2 and 3* above). The other radiograms made on June 6th, 1957, show still better results (See *radiograms 4 and 5*, alongside).

Radiogram 2

Radiogram 3



Radiogram 4

Radiogram 5

Objective examination carried out on the same day revealed an almost complete disappearance of the muscular hypotrophy of the left leg, without any œdema or other circulatory disturbances. The foot appeared thicker and shorter by about 6 cm., with a perfectly normal external shape, *i.e.*, both as regards the back and the sole of the foot, where the internal plantar arch had returned to its normal appearance, taking into account the due proportions (See *photos 1 and 2*, p. 922, for a comparison of the two casts and *photo 3*, below).

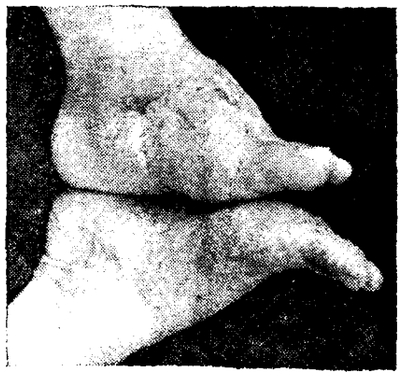
Photograph 3

An irregularly rectangular zone was observed at the centre of the back of the foot, where the graft had been made, with rosy and slightly pigmented and hypoesthetic skin which was otherwise normal in appearance. Only in the lower portion of the said zone, corresponding to the IV metatarsal space, was there a hyper-pigmented and slightly sunken zone of the size of a large lentil (See *photos 4 and 5*, below). No increase was observed in the local temperature and the zone was not painful on palpation.

The surrounding skin was perfectly normal as regards colour, consistency and sensitivity. The flexor-extensor movements of the toes took place normally, and the rigidity of the tibiotarsal joint had disappeared. Walking was normal and painless.

When walking, the patient wore shoes, or even sandals, made to measure, using the plaster cast.

Photograph 4



Photograph 5

I have since learnt, nine months after the operation, that the patient has been very active and has even made excursions to the mountains without over-exerting himself.

This operation leads to many interesting considerations. In the first place, mediotarsal resection as worked out by Andre Richard was extended by me to the point of a true mediotarsectomy. It should be noted that the route followed by Andre Richard allowed a wide margin and osseous resection as necessitated. Further, I thought it necessary to modify the cutaneous suture as, in view of the altered trophism of the back of the foot, it was considered best to remove any tension which might adversely effect the circulation and the trophism of the skin in this area. In spite of this slight improvement of technique and of the fact that after the operation, more than sufficient skin was available, cutaneous necrosis occurred which, according to me, was not caused by a circulatory defect, but merely and exclusively because cutting down was carried out in a septic environment, leading to thrombosis of the arterial capillaries and to phlebitis. This made grafting and the taking of the graft somewhat difficult, but, this difficulty was easily overcome by using the above-mentioned techniques. As regards post-operative progress, I must state that the "windows" on the back of the foot suggested by Quenu, could be advantageously enlarged, in order to follow better any possible alterations of the skin on the back of the foot.

The area of medication was always kept completely uncovered and, after medication, was merely placed under a heated cradle. It is logical and useful to keep the foot in a raised position, particularly at the beginning, and to exercise the limb both when in bed and in the wheel chair. Every time the plaster of Paris cast was removed, opportunity was taken to carry out a radiographic check-up. In order to facilitate the formation of an osseous callus, three courses of Vitamin C and calcium treatment were given by intravenous injections, each for a total of 10 g. and the courses were suitably alternated. At the same time, Vitamins A and D were given in drops.

Conclusion.—The operation was successful and gave a very satisfactory result; and it was worth while performing it because a real foot, even if somewhat short and requiring orthopædic shoes, but otherwise functioning well, is always to be preferred to the best of prostheses. Considerable patience and plenty of time at the surgeon's disposal are essential to achieve success in such operations.

AMYL NITRIC FOR DIFFERENTIATING HEART MURMURS

J. Barlow and J. Shillingford state that the clinical differentiation of apical systolic murmurs arising at the mitral and aortic valves may be difficult, especially when the murmur of aortic origin is audible only at the apex or is loudest there. They present phonocardiograms showing that the inhalation of amyl nitrite has a different effect on the two murmurs, decreasing the intensity of the murmur of mitral regurgitation and increasing that of aortic stenosis. (*Brit. Heart J.*, April, 1958 via *Australian Med. J.*).

A CASE OF ARRHENOBLASTOMA OF THE OVARY

M. C. DEKA, M.B., B.S.,
Assistant Surgeon, Civil Hospital, Gauhati, Assam

Arrhenoblastoma of the ovary is one of the virilizing tumours; its occurrence is relatively rare.

Case report.—Mrs. N.D., a married Hindu woman, aged 16 years was admitted to the Civil Hospital, Gauhati on 12-4-'58, with the complaints of amenorrhœa of one year's duration and an increasing hirsutism on her body.

She attained puberty at the age of 14; and her menstruation had been regular with a 29 days' cycle and lasting for 3 days each time. She has been staying with her husband after puberty, but had not yet conceived. After eight months of married life, her periods became irregular and the flow became scanty on two or three occasions and later she had amenorrhœa.

On examination:—Her general condition was good, the pulse-rate was 76 per minute, respiration 16 per minute and the blood-pressure was 110/80 mm. of Hg.

She had an excessive growth of hair on the sides of the face, upper lips and chin, axillary regions, forearms, thighs and legs; also a linear growth of hair upwards from the upper limit of the pubic hair towards the umbilicus. Her breasts were atrophied. A hoarseness had developed in her voice. The musculature of her limbs was slightly prominent.

A cystic oval mass was felt on the left side of the lower abdomen, which seemed to arise from the pelvis and extend upwards to a little below the umbilicus. There was no tenderness or rigidity and the mass was freely mobile. No sign of pregnancy was present.

Internal examination:—Both the labia were atrophied and the clitoris was appreciably elongated resembling a small penis; the cervix was small. The mass was felt more on the left and posterior fornices and the mass seemed to be separated from the uterus. The size and position of the uterus were normal.

Blood picture:—Hæmoglobin 9 g. per cent; R.B.C. total count 4·2 mill per cmm. W.B.C. total count—6500 per cmm.; poly. 65%; lympho. 32%; mono. 1%; and eosino. 2%.

The urine showed no abnormality. The excretion of 17-ketosteroids in the urine could not be estimated.

Operation notes:—Under spinal anæsthesia 2 cc. Xylocain was admitted between the lumbar 2nd and 3rd spine; through a lower midline incision, the abdomen was opened. A moderate sized smooth multilocular cystic tumour was found to arise from the left ovary; the uterus and the fallopian tubes were normal. The tumour was freely mobile and not adherent to any other

structure. The suprarenal glands were found to be normal on palpation.

Oopherectomy was performed on the left side and the abdomen was closed. The post-operative period was uneventful except for a rise of temperature up to 100 F. for 2 days. She was discharged from the hospital after 20 days, and advised to attend the out-patient department at monthly intervals, for a follow-up.

Her menstruation started again 1½ months after the operation; and her periods have since been regular with a normal flow. The hirsutism is gradually lessening; but the hoarseness of her voice continues. Her external genital organs are changing gradually to normal and the clitoris is now appreciably getting reduced in size.

Pathological report:—The outer surface of the tumour was smooth; its shape was oval and lobulated. The tumour was 14 cm. x 9 cm. x 9 cm. in size and weighed 21½ ozs.

The cut section was greyish white in colour. The tumour was mostly cystic and partly solid. The cysts varied in size and contained a thin, yellowish straw-coloured fluid. The larger cysts were thick-walled and the smaller thin. The lower most solid portion of the tumour was whitish in colour and of a rather firm consistency.

Microscopic examination of a section from the tumour showed mostly large round cells arranged in a sarcomatous pattern. A few areas had undergone necrosis and mucoid degeneration.

Discussion.—Meyer was the first to name this type of ovarian tumour as Arrhenoblastoma. About 125 cases have since been reported in the literature up till now. In some exceptional cases, there is a perfect reproduction of seminiferous tubules of the testis, a condition described in the past by Ludwig Pick as a testicular adenoma of the ovary. More usual is a very imperfect attempt at tubule formation; the cells are arranged in irregular columns and at the far end of the scale the cells are completely undifferentiated, giving a picture of sarcoma: but the tumour is benign or of low malignancy (W. Boyd), only 25 to 30 per cent of cases undergoing a malignant change (Novak).

Acknowledgement.—I am very grateful to Dr. S. K. Chakraverty, Civil Surgeon, Kamrup and Dr. G. K. Das, Surgeon Superintendent, Civil Hospital, Gauhati, for according permission to publish the case report.

My grateful thanks are also due to Dr. B. Barua, Prof. of Pathology, Assam Medical College, Dibrugarh, for the histo-pathological report, and to Dr. S. P. Bhattacharje, for his kind help.

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2. Novak, E.—Text-book of Gynaecology.

PHYSIO-THERAPEUTIC AIDS IN HEMIPLEGIA

Capt. G. S. Rattan, B.Sc., M.B., B.S.,
Civil Asst. Surgeon I. I/c. Hospital-Ajaigarh, Dist. Panna, Madhya Pradesh

Introduction.—The purpose of this report is to describe two simple mechanical aids which can be devised easily in any village, city or even home with the object of rehabilitating a disabled bed-ridden case of Hemiplegia. Many elaborate appliances are available in any physio-therapeutic unit but very few of them can be shifted or made available at remote places. Moreover the number of such units is very small in proportion to the needs of our great country. Since the incidence of cerebrovascular accidents with resultant hemiplegia is fairly high, practitioners will find the simple appliance described here quite useful.

Case report.—On 16-8-'56 H. H., a 78 year-old hypertensive had an attack of cerebral thrombosis which resulted in hemiplegia of the left side. After initial control of shock and general treatment the patient was asked to use his limbs himself and also the attendants were advised to give passive exercises to his paralysed limbs after massage to avoid contractures and deformity. To give exercise to these recovering limbs two mechanical aids were devised, one for the upper and one for the lower limb. These appliances can be fitted to the bed and exercise can be performed by the patient while in bed. Their description is given overleaf.

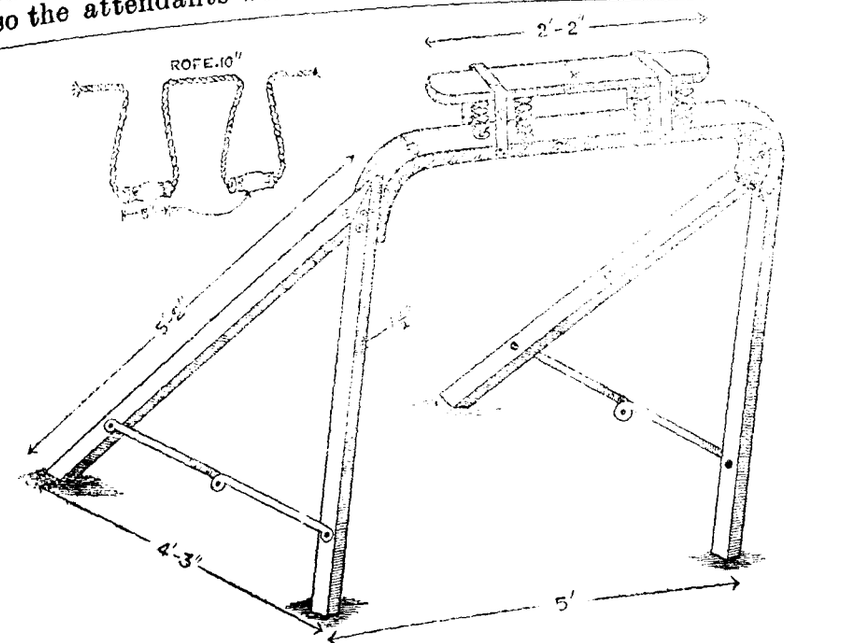
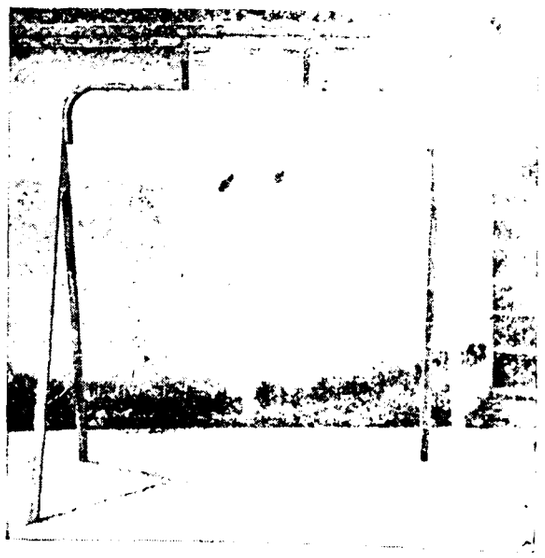


Fig. A. UPPER LIMB APPARATUS

Upper limb apparatus.—(See Fig. A, p. 931). The apparatus has four legs made of wood, 2 on each side. The length of each leg is 5 feet 2". These are separated below but united at the top. There is a central wooden beam connecting the four legs. Near the base of each side of the 2 legs there is a folding apparatus. In the middle of the central wooden beam there are iron springs connected to it. On the top of the springs there is a flat wooden board. There are 2 ropes which go round this board of wood and encircle it and the springs and they hang down. To their lower ends wooden handles about 5" in size are attached. The length of the ropes can be increased or decreased as desired.



UPPER LIMB APPARATUS

Working :—The patient is made to sit by the back rest and he catches hold of the wooden handles. He pulls and then lets go the handles which go up automatically due to the action of the iron springs. This process is repeated for some time. By this, the tone of the muscles of the recovering paralysed limbs and their power increase. The exercise is given as a regular routine at least twice a day and then as the patient may like.

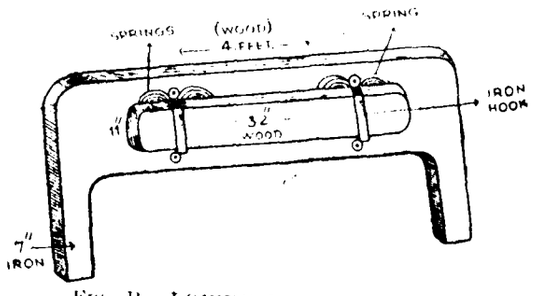
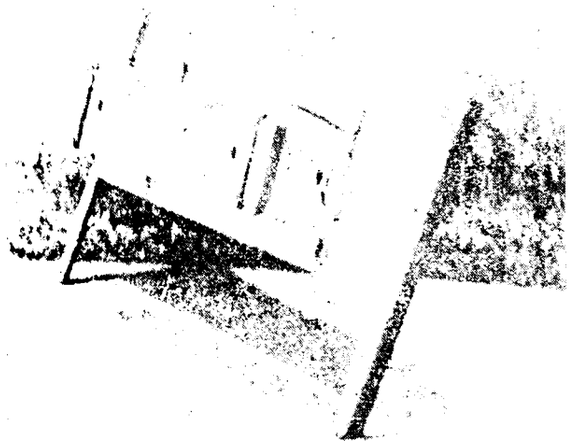


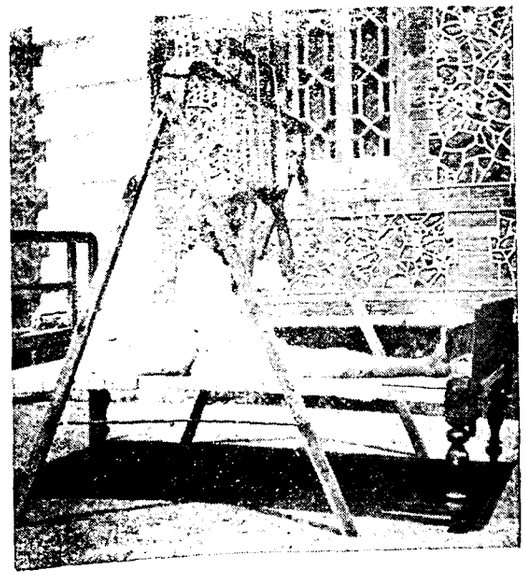
FIG. B. LOWER LIMB APPARATUS

Lower limb apparatus :—(See *Figure B*, above). It consists of a big wooden board, 4 ft. x 2 ft. To its lower end iron rods are attached to each side which fit in iron hooks provided on the bed. To the middle of the wooden board iron springs are attached, the free end of which faces the feet of the patient and the 2nd is fixed to the wooden board. Towards the free end a wooden board 32" x 11" is attached. The feet of the patient work on this wooden board which is pressed by them. Due to the action of the iron springs it regains its place and is ready to be pressed again.



LOWER LIMB APPARATUS

Working :-The patient is made to sit by the back rest and his feet are placed on the wooden board to which springs are attached. The feet press against this board which due to its spring action, resumes its original place. This pressing action is continued till the lower limbs get full exercise.



Both the apparatuses fitted to bed and in action

Progress of the case :—By the continuous use of these appliances the patient who had a complete flaccid hemiplegia regained almost 80% muscle power in his limbs and could be rehabilitated to self-care within a period of about two months.

Summary.—Two useful mechanical aids which can be locally improvised even in remote Indian villages have been described. They can be made locally and used in Hospitals and dispensaries, and private practitioners can also use them for the successful rehabilitation of hemiplegics.

THE ARGYLL ROBERTSON PUPIL

The optic sign originally described by Argyll Robertson in connection with cases of disease of the spine showed the following characteristics: (1) sensitivity of the retina, (2) marked contraction of the pupil, (3) further pupillary contraction during accommodation for near vision, (4) nonreaction of the pupil to changes in the amount of light admitted to the eye, and (5) only medium dilation in response to strong solutions of atropine. The mechanism and site of pathologic change have been variously attributed to:—injury to both the light reflex and the sympathetic fibres, a single lesion in the iris itself, damage to one of two postulated efferent path-ways for pupillary constriction, and parasympathetic spasm rather than absence of sympathetic innervation. The Argyll Robertson pupil has been noted by various authors in connection with syphilis, congenital cerebral defects, cerebral hæmorrhage and thrombosis, tumour, myelitis, arteriosclerotic and senile dementia, internal hydrocephalus, meningitis, multiple sclerosis, trauma, encephalitis, alcoholism, diabetes, certain toxic conditions, herpes zoster, virus infections, and many other conditions. Some authors, however, believe that the true Argyll Robertson pupil is found only in syphilis; in other pathologic conditions the Argyll Robertson characteristics are present in varying degrees and combinations.—(*U. Mich. Med. Bull.*, *24*: 2, Feb. 1958).

THE RED, BARE, OR SMOOTH TONGUE

This is essentially the tongue of pellagra or Vitamin B deficiency. In this condition the absence of Vitamin B in the diet would seem to produce failure in the growth of yeasts, and, as a result, the filiform papillæ are worn away while the fungiform papillæ become more prominent and often painful. As the atrophic process continues, the connective tissue core of each papilla sinks and the whole papilla decreases further in size, losing its shape completely, until they appear as short epithelial projections. Finally, the last vestiges of the papillæ disappear and the surface becomes smooth, so that the tongue becomes the "stringless instrument of Old John of Gaunt."

The lesions respond promptly to treatment with nicotinamide. While nicotinamide tablets will produce the required improvement in about 1 week's time, the use of the whole Vitamin B complex is preferable in large doses.—(*Jour. Irish Med. Assoc.*, April 1958 via *Cur. Med. Digest*).

SURGERY, ONLY SPECIFIC TREATMENT OF ULCERATIVE COLITIS

There is perhaps no illness the treatment of which has so completely defied all efforts of standardization as nonspecific ulcerative colitis. Indeed, it is this nonconformity and departure from the usual among diseases that has so greatly engendered and nourished the many biases and misconceptions that even today prevail in no small number.

The fact must be recognized that there is no specific cause and at the present no specific nonsurgical form of treatment. But ulcerative colitis can be cured by surgical removal of the diseased bowel. Such surgery is associated with minimal mortality, low morbidity, and rehabilitation of over 90% of the cases.—(*Current Medical Digest*).

The Antiseptic

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Editorials

THE NATIONAL INSTITUTE FOR TUBERCULOSIS
(Sample Survey Completed)

IT will be remembered that the Indian Council of Medical Research not long ago initiated a sample survey of tuberculosis in India, as it was felt that the available statistics were not sufficiently correct or convincing to draw conclusions of value and to formulate future control programmes in an accurate and methodical manner.

Addressing the Andhra Pradesh Academy of Medical Sciences on the 10th November 1958 at Hyderabad, Shri Dr. P. V. BENJAMIN, Adviser to the Union Government on Tuberculosis said that the Survey had now been completed and that the report was being finalized. He stated that this scientific sample survey revealed that the incidence of tuberculosis was two per cent of the whole population, and what is more that its incidence in rural areas, hitherto considered insignificant was really not so. Dr. BENJAMIN pointed out that in addition to the BCG vaccination, the Government of India in their anti-tuberculosis campaign had included certain other measures, the most important of which were the establishment of tuberculosis clinics and the expansion of medical services. Some provision had been made for the isolation of affected cases living in crowded and unhygienic homes. The national programme provided for the establishment of a clinic in each district by the end of the Second Plan period. The Central Government proposed to give Rs. 50,000 worth of equipment for each clinic. The States had to find the buildings and the staff.

Though the programme had been accepted by all the States in India, the progress has been very slow; pressure must

obviously therefore, be brought to bear on the State Governments by the Tuberculosis Associations and their workers, in order to quicken the pace and tempo of progress. As Dr. Benjamin rightly stressed, the emphasis in the anti-tuberculosis campaign has hitherto been mainly on the individual; but in the newer set-up envisaged by the National Programme, the prevention of the disease in the community will be the ideal to aim at. Another important item in the national programme was the provision of beds for the isolation of patients, especially those living in single room tenements. If there were sufficient rooms in a house, the patient could be isolated and treated but those living in single-room tenements had to be removed to hospitals.

In this context, we may mention that the first scheme of domiciliary treatment services for T.B. patients in the Mysore State was inaugurated in Mysore City on the 26th October 1958 by Shri Dr. K. K. Hegde, Mysore's Health Minister; under this scheme doctors will be sent to the houses of patients in the neighbourhood of the dispensary started for this purpose, at no expense to the patients. During the Second Five-Year Plan, Mysore will have many more T.B. clinics, sanatoria, and rehabilitation centres, and we understand that proposals are under consideration for establishing a T.B. demonstration and training centre at Bangalore at no distant date. Bangalore is no doubt ideally suited for this purpose.

It will thus be seen that the tendency all over the country has been to provide hospitals and sanatoria. We have at present 35,000 beds in all in the country and certainly many more are needed. While the Central Government cannot take up the expansion of medical relief by instituting more beds as part of the National Programme, it will allow the States to provide as many beds as possible. The cost of providing a bed is about Rs. 10,000 and the upkeep comes to about Rs. 2,000 per annum. The situation has greatly altered with the availability of new anti-bacterial drugs, and the rich patients could be isolated and treated at home. The hospitals could be reserved to cater to the needs of the poor patients.

Emphasizing that non-official organizations could not be expected to find money for the treatment of poor patients. Dr. Benjamin said that the Central Government had advised the State Governments to subsidize liberally the non-official organizations to continue their services to the people.

He disclosed at this meeting that the Central Government proposes to set up a National Institute of Tuberculosis, which will be located at a place where the national training programme is being implemented. This is obviously what the Mysore State Minister of Health referred to in his address, referred to *supra*. Stressing the need for the general medical practitioner to keep himself abreast of modern treatment, Dr. Benjamin said that one of the functions of the proposed National Institute for Tuberculosis was to organize refresher courses for general practitioners at frequent intervals. Not only doctors but also non-medical personnel and technicians would be trained at this Institute. It would also conduct post-graduate research and investigations.

The campaign against tuberculosis had been developed in various Western countries by a perfect collaboration between voluntary public effort and voluntary public co operation. The non-official voluntary health organizations had played an important rqle in the field of research too. A similar spirit of service and a hearty co-operation between non-official agencies and State Governments, should pervade all our efforts in India in order to eradicate this white plague from our midst.

SELF-SUFFICIENCY IN DRUGS AND IN COSTLY MEDICAL EQUIPMENT

It is indeed welcome news that India will soon be in a position to achieve self-sufficiency in the matter of her requirements of drugs and X-ray equipment. The Soviet delegation which toured the country in the first week of October 1958, led by a Deputy Minister of the Soviet Government, investigated the possibility of setting up four plants for the manufacture of certain drugs and medicinal preparations that have not hitherto been manufactured in India. The Russian experts visited Calcutta, Bombay, Lucknow, Poona, Durgapur, Hyderabad and other places where they saw the local pharmaceutical research institutes and factories and interviewed the leading Indian scientists. The biggest is, of course, the Central Drug Research Institute at Lucknow, whose director, Dr. B. Mukherjee, has expressed the hope that the aid that the Russians are offering will enable us to produce the most important medicinal drugs from local raw materials.

During 1957, India imported about Rs. 13 crores worth of drugs from foreign countries in spite of the great progress we have made during the last 10 years in this direction. Though the Indian penicillin factory at Pimpri has been manufacturing quite a large quantity of this drug, we had still to import Rs. 2 crores' worth of that antibiotics from foreign countries. The Soviet-Indian Commission has planned to finance and work five different projects according to the report they have presented to the Union Ministry of Industries at Delhi on the 14th of October. These are the (1) manufacture of synthetic drugs,

occupational deaths per year than any other major industry. That is not so far, the situation in the United Kingdom or in India. But we have to look ahead. In the next ten or 15 years, great changes will occur, and all these are really dangerous to the life of men, women and children, and the surgeons had a great responsibility to draw up a scheme of quick accident relief.

As Sir Harry suggested it would be useful for hospitals to have their own flying squads of surgeons. Accidents come singly or involve many persons together at the same time, as, for instance, when there is a railway accident. Hospitals have to be prepared at all times for all kinds of emergencies though, sometimes, a crisis reveals, in this country, that they are not: It would be wise also that every householder and housewife should have some knowledge of accident-prevention. The public authorities are aware of this: and that is why we have "*Weeks*" devoted to fire prevention and traffic accident prevention. Children rarely stop to think what they are doing; and every parent knows how difficult it is to keep them free of accidents of one kind or the other. Here in India, farming is not yet highly mechanized nor has electricity reached all parts of the country. No doubt all this will certainly come in the not very distant future. Accidents, however, are a major urban problem; and no City can afford to be without a good accident relief service; and the provisions of an efficient accident service must always be a charge on the public exchequer.

As Dr. N. S. Narasimha Ayyar pointed out we have in Madras State the nucleus for an Accident Relief Service Organization in the Red Cross, Ambulance and Fire Brigades, and so the scheme suggested by Sir Harry Platt will not be very difficult to carry out.

We feel that there must be enough ambulances in the larger cities to serve the community and red-tape in connection with their ready availability must be totally eliminated. Sometimes it is found very difficult by passers-by to get an ambulance to remove an injured person whom they come across on the road-side. The primary anxiety of the ambulance transport authority is usually: as to who would pay for the ambulance? The debating of such questions might well lead to disastrous results as regards the injured person. It is therefore, imperative that it is only after the patient has been attended to, the question whether he is capable of paying the cost of the service or not must be taken up and *not before*. A relief service cannot make any distinction between rich and poor; the same quick and efficient service must be available to all.

Obituary

THE LATE LT. COL. C. R. KRISHNASWAMI, M.S.

In the death of Lt. Col. C. R. Krishnaswamy, M.S. on the 7th October '58, Madras has lost another of her eminent doctors, who was popular and who had an extensive practice. He was a surgeon primarily but enjoyed a large family practice as a physician also. He was Honorary Surgeon in the Government General Hospital for several years and as teacher of Surgery he earned a very good name. He had his early training under the late Dr. S. Rangachari.

Dr. C. R. Krishnaswamy had a large circle of friends and was liked and loved by all of them for his bubbling enthusiasm and cheerful disposition. After returning from active service in World War II he devoted much of his spare time to public affairs and became a dauntless and fearless critic of what he considered defects in the political set-up of the times. He contributed several articles to the local newspapers which were often humorous and satirical but were well appreciated because they showed a depth of knowledge and the courage of his conviction.

He was a top-ranking Freemason with a remarkable knowledge of and enthusiasm for the tenets of the Craft and allied orders in Freemasonry. He was a great friend. He was in fact a unique personality with a smile and a kind word to everyone he met.

We offer our heartfelt condolences to the members of the bereaved family.

DIZZINESS

G. D. Hoople (*J.A.M.A.*, December 14, 1957) discusses the differential diagnosis of dizziness. He describes dizziness as a sense of motion either of the patient or of his surroundings, when actually there is no motion of either. Dizziness is most often due to a disorder of the labyrinth, but may be caused by a lesion affecting the eyes or the proprioceptive system. The ear is the true organ of balance, and though lesions affecting the eyes or the muscle joint system may cause mild dizziness, these do not produce severe symptoms such as may result from dysfunction of the labyrinth. Full examination is necessary to arrive at a diagnosis. A large proportion of labyrinthine disturbances are not serious. Relief is sometimes obtained by giving sedatives, vasodilators, antinauseants or by prescribing a salt-free diet *plus* ammonium chloride to combat œdema. Severe hydrops of the labyrinth may destroy hearing in one ear and leave a residue of dizziness and distorted hearing. In such a case surgical destruction of the affected ear may give great relief.—(*Austral. Med. J.*).

CEREBRAL HÆMORRHAGE IN HYPOGLYCÆMIA

H. Falgren, B. Anderson and C. Lundmark review the cerebral changes produced by recurrent or prolonged hypoglycæmia and record a case of a diabetic male taking insulin, who developed hypoglycæmia, failed to respond to glucose, and was found to have large bilaterally symmetrical intracerebral hæmorrhages without evidence of arterial disease.—(*Acta Med. Scandinav.*, August 13, 1957, via *Austral. Med. J.*).

GLEANINGS FROM THE MEDICAL PRESS

OBSTETRICS & GYNÆCOLOGY

"Clean" versus catheter specimens of urine.—(*The Lancet*, 6-9-1958).

It is widely accepted that specimens of urine for bacteriological investigation from female patients should be obtained by catheterization. Besides causing inconvenience and occasionally embarrassment, this procedure carries a moderate risk of introducing fresh infection, and in fact it is often carelessly performed without regard for asepsis. It has been suggested that technical perfection necessitates the presence of two nurses—one to separate the labia and clean the meatus, and the other to insert the catheter.

Wishing to avoid the hazard of introducing infection Boshell and Sanford advocate the examination of "clean" freshly voided specimens as an alternative, and claim that these specimens compare favourably in a bacteriological sense with those obtained by catheter. The suggested procedure consists in thorough cleaning of the periurethral area in a Sitz chair filled with green soap solution, followed by gentle scrubbing with pads containing 'Zephiran' (1% solution of benzalkonium chloride). The patient then voids, holding the labia apart, and a *mid-stream specimen* is collected for culture. The results in 67 cases corresponded closely with those from subsequent catheter specimens, and the technique is recommended as a screening method to reduce the need for instrumentation. It may be questionable, however, how far such arrangements are appropriate in a busy outpatient clinic or hospital ward.

Tubal gestation following antibiotic treatment of genital tuberculosis.

Routine bacteriological examination of the curettings obtained in infertility investigations has increased the frequency with which genital tuberculosis is being recognized and treated. Halbrecht (*Obst. Gynaec.*, *10* : 73, 1957) reports 16 tubal pregnancies in 100 patients who had received antibiotic treatment for genital tuberculosis in contrast to the general incidence of 0.3 per cent of all pregnancies. As less than 100 cases of tubal pregnancy associated with tuberculosis salpingitis were reported prior to effective therapy becoming available (Nokes and others, 1957), and on the basis of personally observed cases, it would appear that a new syndrome is emerging. The patient's own doctor should be warned of this increased risk when antibiotic therapy is undertaken.

Hydramnios as an early sign of œsophageal atresia.

Radiographic investigation of the fœtus will demonstrate only bony abnormalities in cases of hydramnios. Soft tissue abnormalities will remain unrecognized until birth. Scott and Wilson (*Lancet*, *ii* : 569, 1957) have drawn attention to the frequency of œsophageal atresia in these circumstances and to the improvement in neonatal survival which can follow the practice of routinely passing an œsophageal catheter immediately after delivery in all cases of hydramnios with a normal fœtal skeleton. Neonates who are denied any effective fluid intake, lose 50 per cent of their extracellular water within 24 hours, in contrast to the loss of 10 per cent by an adult. The need for early diagnosis is thus obvious.

SURGERY

Food and vomit in the lungs. (*The Lancet*, 6-9-'58).

The aspiration of food and vomit has been investigated by Gardner. He introduced barium sulphate through a gastric tube into the stomachs of ten patients immediately after death. The bodies were then transferred to the mortuary, and radiographs of the lungs were taken at the subsequent necropsies. In seven out of the ten, barium had entered the lungs, reaching the alveoli in several. Thus, unless the trachea is blocked as soon as the patient dies, necropsy evidence of antemortem aspiration cannot of itself be considered conclusive.

Gardner then studied a series of ninety-four adult male and female patients who had either undergone a major operation or were debilitated for other reasons. Each had non-flocculable barium sulphate added to all drinks—in the proportion of one part in six—for two to four days. The lungs were repeatedly examined radiographically, and bronchoscopy was undertaken when clinically indicated. Barium entered the lungs of ten patients (11%), but in most of them it was impossible to decide whether it was inhaled during vomiting or feeding.

To distinguish the incidence of aspiration of vomit from that of aspiration of food, barium was given to a further fifty-one patients directly into the stomach through a tube, so that its appearance in the lungs could be due only to inhalation of gastric contents. This occurred in only one patient. *Gardner concludes that aspiration of food is commoner than that of vomit* (it took place probably in 9–10% of the patients studied as opposed to 1–2% for vomit)–and *that it is often multiple.* Aspiration of either is often extremely difficult to diagnose clinically. The overall results suggest that *one in about every ten debilitated surgical patients inhales food or vomit.*

The complications directly attributable to aspiration are difficult to assess ; but the fact that some patients in this series undoubtedly died as a result of aspiration suggests that greater care is needed in posturing and feeding those who are very ill. Gardner believes that aspiration of vomit or food is too often the *coup-de-grace* —rather than an agonal phenomenon —*in* an ill patient who might otherwise recover. He suggests that the standard *hospital feeding cup*, which is designed to facilitate feeding in recumbency, *should be abolished as its style contributes to aspiration.* Not only does the shape of the spout enable fluid to be poured into the trachea, but the hooded top ensures that the patient is taken unawares. The patient should either sit up and drink out of an ordinary cup or glass or lie on his side and drink through a straw. If neither is practicable, feeding should be through a tube directly into the stomach. The danger associated with vomiting can be offset only by the adoption of a prone or semiprone position.

Combined oxytetracycline and hydrocortisone in the local treatment of severe burns.—(*Br. Jour. Clin. Pract.*, July 1958).

The modern therapy of burns has two purposes : the first is the management of shock, the result of physiopathological disturbances prevalent in extensive burns and the second is the adequate local treatment of the burned areas. Dr. J. Crispoux of Belgium outlines an ideal local treatment.

Rapid sterilization of burns is essential ; so prevention or control of infection is carried out by systemic or local treatment or by a combination of both. When effective antibacterial preparations are used local treatment gives very satisfactory results. Then medication not only achieves local sterilization but it also allows for grafting of the burned areas.

Because of its large antibacterial spectrum, we selected oxytetracycline hydrochloride and used a preparation combining it with hydrocortisone (Pfizer Terra-Cortril Topical Ointment). This ointment contains 30 mg. of oxytetracycline as the hydrochloride and 10 mg. of hydrocortisone per gramme together in a petrolatum base.

First and second degree burns :—In burns of the face, the oxytetracycline-hydrocortisone ointment is applied directly to the lesions after removal of the roofs of the bullæ. To make this application easier, the ointment is softened in hot water. On hardening, the ointment shields the burned tissue from air.

In burns of other parts of the body the softened ointment is first spread on gauze and then applied to the

burned areas. The dressings have to be changed every 3 days.

Third degree burns:—These deep burns first necessitate debridement of the necrotic areas. Then, if the tissue is granulating too rapidly, wet dressings with hydrocortisone suspension containing 25 mg. per cc. may be applied first at 3-day intervals, followed by the ointment. Otherwise, oxytetracycline-hydrocortisone ointment is applied immediately, then every third day. The action of the ointment is a little slower than that of the wet dressings, but this has the advantage of sterilizing the tissues besides checking too rapid granulation. In this way, small areas will heal very rapidly.

In extensive burns with large surfaces necessitating grafting, dressings with oxytetracycline-hydrocortisone ointment are applied every 3 days until a sterile and receptive bed is obtained. Then the surface is grafted. If its size does not allow for total covering of the area, large strips covered by grafts should alternate with bands of granulating tissue. These granulations are controlled with combined oxytetracycline-hydrocortisone ointment. Epithelialization is accelerated and no unsightly scars develop. The ointment has to be applied sparsely to avoid soaking of the grafts. It is evident that older ulcerated burns without a tendency to granulation will not benefit from this form of local therapy.

MEDICINE & THERAPEUTICS

Acute rheumatic fever: A study of 132 cases in young adults.—(*Ann. Int. Med.*, *48*: 1017-1025, May 1958, via *J.A.M.A.*).

Bates reports the clinical manifestations of acute rheumatic fever in 132 men, between the ages of 17 and 28 years, in military service who were treated at the naval hospital in Great Lakes, Ill., between 1944 and 1956. The patients, on admission, were placed in bed and were given 300,000 units of procaine penicillin G intramuscularly, daily for 10 days, to eliminate streptococci. Aspirin in divided doses totalling 6 g. daily was given for the first 2 days, and 4 g. daily thereafter. Patients with carditis were given cortisone, in addition to aspirin, in a dose of 300 mg. the first day and 200 mg. daily thereafter until all manifestations apparent at the bedside had subsided; the dose, then, was gradually reduced over the next 3 or 4 weeks. Notable was the complete absence of chorea, heart failure, cardiac enlargement, or deaths. In contrast to patients with rheumatic fever reported on by other workers, all these patients had objective arthritis at some time during their course. Other manifestations of rheumatic fever were anemia in 24 (18·2%), albuminuria in 11 (8·3%), pulmonary infiltration in 4, abdominal pain in 3, and a pericardial rub in 1. Petechiæ occurred in 6, erythema nodosum in 2, and herpes simplex in 1. The most significant association of persistence of organic heart murmurs was that with fever. Persistent organic murmurs necessitating discharge from military service occurred in 37 patients (28%). One hundred four patients (78·8%) were hospitalized for less than 60 days until they were able to return to full duty.

Prompt diagnosis and hospitalization, with early abolition of streptococci by the administration of penicillin, resulted in a more benign course of the disease and a shorter period of disability but did not materially reduce the incidence of valvulitis. Attempts to identify features of the illness that accompany valvulitis were unrewarding, and valvulitis was found to be an early feature of the disease in most cases. These observations suggest that valvulitis may be entirely separate from all other clinical features of rheumatic fever and may not be entirely prevented by any currently known method of therapy. No evidence was found that rest in bed beyond the period of acute carditis is of any value in determining the final outcome, or that prolonged rheumatic activity leads to greater heart damage in patients in this age group.

Staphylococcal pneumonia in infancy and childhood.—(*Danish Med. Bull.*, May 1958).

Kringelbach and Winge treated 228 cases of pneumonia in the Pædiatric Department during the period Jan. 1, 1955 to March 1, 1957.

Staphylococcal pneumonia constitutes approximately six per cent of all the cases of pneumonia while the patients who died from staphylococcal pneumonia constitute half of all the deaths from pneumonia.

Staphylococcal pneumonia may occur during the entire period of childhood, but by far the majority of cases occur in *infants aged 0-4 months* and in this age the mortality, also, is considerable. The disease may run somewhat variable courses but *two main clinical types* are distinguishable:—

(*a*) An acute fulminating form following a trivial infection of the upper respiratory tract. In the course of one to two days, the general condition becomes severely impaired with dyspnœa, cyanosis and distended abdomen. Many of the patients develop shock and die within a few days of the commencement of the disease. Auscultation reveals signs of unilateral consolidation and radiological examination shows corresponding diffuse opacity over the entire lung.

(*b*) A more prolonged and more benign course. Initially this type resembles an ordinary pneumococcal pneumonia but does not react to treatment with sulphonamide preparations or penicillin. Empyema or pneumothorax develops, possibly pyopneumothorax or tension pneumothorax with displacement of the mediastinum. The radiological picture is characterized by rapid changes; pulmonary infiltrates of varying extent; local circular translucent areas of varying sizes, pneumatoceles or "pseudocysts" as expressions of intrapulmonary interstitial emphysematous bullæ which occasionally may contain fluid. Should these rupture, pneumothorax, pyopneumothorax, mediastinal emphysema etc. may be caused. Occasionally, pneumatoceles may persist unchanged for weeks. Endocarditis, myocarditis or pericarditis are no unusual complications.

The diagnosis is verified by demonstration of staphylococci in the pleural fluid and/or in the blood, alternatively in the pulmonary tissue by direct puncture of the lungs (Disney *et al*). Culture of staphylococci from the nose and throat may support the suspicion but is not conclusive. The presence of staphylococcal foci in the form of furuncles or osteomyelitis may be suggestive. The diagnosis is rendered probable by:—(1) The course of the disease with absence of reaction to sulphonamide preparations and penicillin. (2) The age of the child. (3) Radiological findings:—(*a*) diffuse unilateral opacity, (*b*) pneumatoceles, (*c*) pneumothorax, (*d*) the rapidly changing picture. (4) Pyopneumothorax and (5) Empyema.

TREATMENT:—Tetracycline preparations, frequently for several weeks. Supplementary oxygen therapy and relief of the distended abdomen by gastric and rectal tubes may be necessary. Several of the pleural complications require surgical intervention, most frequently as closed suction drainage. Late in the course of the disease, resection may be considered (bronchiectasis, chronic lung abscess or relapsing atelectasis).

Sulphamethoxypyridazine.—(*The Practitioner*, September 1958).

Chemotherapy with the sulphonamides has remained as the treatment of choice for certain infections throughout the era of predominence of antibiotics. Among bacterial infections, meningococci, some bacillary dysentery, and colon bacillus infections of the genito-urinary tract can be classified in this group. Among viral diseases, trachoma, and among fungi, no cardial infections might also be treated preferentially with a sulphonamide. In all of these conditions, and others of more elective choice, the properties of this new sulphonamide (Lederkyn) should be an asset. Outstanding among these

properties are the slow rate of excretion and poor acetylation, which permit the use of a single daily dose to maintain a constant antibacterial concentration of free sulphonamide in the plasma. The ease of administration makes long-term treatment readily acceptable. Further, in common with other sulphonamides, sulphamethoxypyridazine diffuses readily with extracellular body water and is excreted almost entirely by the kidneys. Its relatively greater solubility in acid urine appears to be sufficient to eliminate the dreaded complication of concretions or renal toxicity from *crystalluria*.

This new agent does not overcome some drawbacks of sulphonamides. This group of drugs is primarily bacteriostatic, and many strains of bacteria or other micro-organisms are resistant to their inhibitory influence. Skin rash, fever, and hypersensitivity reactions must be expected in some patients. *The new agent is an improved tool.* It is a potentially double-edged instrument, and will contribute most *by limited precise use.*

Noise in hospital.—(*The Practitioner*, September, 1958).

Why so much unnecessary noise has been tolerated for so long in so many different hospitals is one of those mysteries of life that the ordinary individual will never be able to understand. As the King Edward's Hospital Fund for London has recently demonstrated at Paddington Hospital, the problem can be largely solved with a modicum of common sense and a minimum of financial expenditure. The simple procedure, as outlined in the Fund's annual report for 1957, was to find out from the patients what noises worried them. The Hospital Secretary then got busy. 'He found a simple method of stopping the bed screens from rattling and banging. He had all the doors oiled and all the automatic shutting devices repaired. Every trolley wheel was cleaned, oiled and, if necessary, re-tyred; a new material for dressing-trolley tops was discovered which deadens the rattle of equipment. Arrangements were made for all new student nurses to be visited in the hospital by a shoe manufacturer who fitted them with quiet comfortable shoes.' The cost of all this was trivial.

Now that it has been demonstrated that the administrators can do so much to solve the problem, there remain *two causes* of noise for which the doctors must find a remedy: *the noisy patient and the patient who snores.* As the King's Fund points out, both of these would be remedied by the installation of cubicles, but this is both expensive and administratively difficult. Is it really beyond the wit of the medical profession to produce a more practical solution? With the noisy patient there should be little difficulty in view of the large range of sedatives and hypnotics now available to the profession. But what about the patient who snores? There are traditional remedies galore, but it must be confessed that hitherto the medical profession has tended to look upon snoring as more of a music hall joke than a problem for serious investigation. It is therefore, satisfactory to know that the King's Fund is encouraging an experimental investigation of the subject. We trust that in this worthy work they are receiving the full support of the Clinical Research Board of the Medical Research Council and the College of General Practitioners, for the patient who snores can be as serious a problem in general practice as in hospital practice.

Status asthmaticus.—(G. F. Walker, M.D., F.R.F.P.S., D.C.H., M.R.C.P., in *Br. J. Clin. Prac.*, July 1958).

A patient prone to asthma may slip into a state of urgent wheezing and dyspnœa and be suddenly in mortal peril as a result of respiratory tract infection, emotional stress, physical exhaustion, over-addiction to nasal douches and sprays (nearly all of which have a rebound effect), or as a result of endocrine upset.

Especially important is emotional stress coupled with infection in the

provocation of status asthmaticus in a chronic asthmatic. Not only rest—quiet and reassurance are urgently needed.

A thorough, unhurried general overhaul, even if negative in its findings, will calm the patient. But infection will often be found and prescribing the appropriate chemotherapy or antibiotic with confidence and assurance will do more to reassure a patient than any number of words.

The best antibiotic for an acute exacerbation of chronic respiratory tract infection is tetracycline. A convenient method is to give slowly a single intravenous dose of 500 mg. of 'Achromycin' or 'Terramycin' and then 1 gramme of the same drugs daily by oral capsules for a few days.

Many of the sprays, inhalations and douches, to which so many asthmatics are addicted, do very much more harm than good and many a chronic asthmatic has brought himself into status asthmaticus by relying too much upon them. *Firstly*, they shrink and paralyse the nasal mucosa, throwing the respiratory gates wide open to all kinds of substances ordinarily denied transit. Soon they permit a rebound turgescence in the nose which promotes dyspnœa and discomfort. One of the very few substances which should ever be put into an allergic nose is hydrocortisone snuff.

Secondly, it is well known that any opiate is harmful in asthma because opium in any form depresses respiration and renders the bronchial mucus more tenacious and viscid. But it is often forgotten that many favourite and familiar cough syrups, linctuses and family mixtures contain codeine and thus are potentially dangerous. All the common expectorants, and certainly also bromides, should be banned in status asthmaticus. None of the old-fashioned expectorants, such as ipecacuanha or squill, have any useful therapeutic effect and many of the traditional components of cough medicines are relics of humbug and superstition. Effective expectorants take too long to act and have too many side-effects. Iodides, perhaps have some little place in helping in the liquefaction of bronchial mucus and so may cause its expulsion.

In aminophylline we have a potent, safe and valuable remedy. It is best given in the form of intravenous amino-phylline injection B.P. say 250 mg., 3-hourly, very slowly. When the intravenous aminophylline has got to work, the task can be followed up with theophylline by mouth.

Finally, hormone therapy is most important. Five minims of 1:1,000 adrenaline is a safe and potent bronchodilator but the key to the endocrines in status asthmaticus is corticotrophin. This should be given in the form of 'Acthar Gel' by intramuscular injection starting with 20 units, repeated 4-hourly or more according to the clinical severity of the case. This substance should ease and shorten many attacks of status asthmaticus, and some clinicians consider it to be more helpful than any other remedy.

Control of symptoms in the chronic psychoses with concentrated liquid promazine.—(*Military Medicine*, Augst 1958).

Oral treatment of the psychotic with medication in tablet form may fail because of the propensity of the patient to conceal the dose in the mouth and later to expel it secretly. A total series of 157 institutionalized patients representing all categories of chronic mental disease were treated with promazine supplied as a liquid concentrate, in varying potencies.

One group of 99 females, suffering from various types of schizophrenia and other psychoses, received the liquid in a concentration of 100 mg. per cc. Eighty per cent had been treated previously with electroshock and certain tranquilizing agents, in all cases with little or no alteration of the behaviour pattern.

Dosage ranged from 100 to 900 mg. daily, and medication was continued for one week to six months. Eighty-nine per cent received a total daily

dose of 200 to 600 mg. For 32 per cent, medication was continued for six months.

Promazine liquid concentrate was administered in fruit juices or other beverages, and was continued in 32 per cent for six months. When concurrent electroconvulsive therapy was occasionally required, medication was maintained throughout the course, but on the day of each shock treatment the morning dose of promazine was omitted.

Of the over-all series of 157 patients 74 percent experienced a moderate to pronounced degree of benefit, and 26 per cent showed no change. Consistent improvement occurred in the patients whose most prominent symptoms included belligerence and combativeness, confusion, delusions, insomnia, muteness, untidiness or denudativeness, petty thievery and apastia.

Promazine liquid concentrate may be preferable for treatment of such cases because (1) the patient actually ingests every dose, and (2) earlier blood levels are produced as a result of more rapid absorption of the fluid compound.

EAR, NOSE AND THROAT

Wax keratosis in children's ears.—(*B.M.J.*, 13-9-'58).

It was some time before penicillin became easily available in forms which could be used by general medical practitioners, but once this happened it was used freely in the treatment of acute otitis media. In 1953, it was stated that nearly all such cases were being treated by general practitioners, only the failures being seen by otologists (Black, 1954). One of the causes of failure was due to a mistaken diagnosis in that the patient—a child—did not have otitis media, but infection and suppuration in a mass of wax deeply impacted in the external auditory canal. It had long been known that wax did occasionally become impacted against the tympanic membrane where it became covered by sheets of desquamated epithelium, and we had come to call this a "*wax keratosis.*" This was thought to be the early stage of the so-called keratosis obturans, a condition well enough known to appear in the textbooks, although there was discussion about its cause and origin and even about its nature.

An investigation was carried out in 1,000 consecutive children seen for the first time in 1957 in three E.N.T. out-patient departments, perhaps not an entirely normal cross-section of the whole. Three different classes were recognized in these children, as follows: (1) no wax present anywhere in the external auditory canals; (2) wax present in the area which normally produces it; and (3) was impacted in the deep part of the external auditory canals—this is, wax keratosis.

A further series of over 500 children were seen in two more E.N.T. out-patient departments. The results in the two series showed that 2·6% of the first series had wax firmly impacted against the tympanic membrane. When the wax was removed under general anæsthesia from these 26 children, 14 were found to have a well-formed wax keratosis, and in the remaining 12 the wax had formed a complete cast of the canal, but no epithelial envelope was present as yet. It is probable that these 26 cases represent degrees of the same process, which has been termed wax keratosis. In the second series 3·5% showed the presence of a wax keratosis.

Wax keratosis, if looked for, will be found in about 3% of children attending an E.N.T. department for any reason. It is almost universally bilateral. In half the cases there will be no suspicion of any lesion in the ears until they are examined.

Respiratory suppuration (sinusitis, bronchitis, bronchiectasis) will be found, if looked for, in nearly all cases.

The wax kerotoses must be removed to prevent the possibility of any future infection, with local suppuration or progression to keratosis obturans. General anæsthesia will be required for this removal and will allow the opportunity for antral lavage.

Chronic suppuration with polypus formation can occur and simulate chronic otitis media.

Early removal, associated with current and subsequent treatment of any respiratory suppuration present, will result in an ear normal in appearance and in function, with no likelihood of recurrence.

DERMATOLOGY

Neurodermatitis.—(*Br. J. Clin. Pract.*, July 1958).

It stems from a habit in which the patient starts rubbing an area of skin. The more he rubs the more it irritates —a vicious circle is formed and the skin develops a shiny thickened appearance called lichenification. Some people seem more prone to the condition than others and it seems probable that some skins react more easily than others. Localized areas of lichenification are often seen in patients with constitutional eczema and undoubtedly the same mechanism of rubbing is at work here. Not infrequently, however, a single circumscribed lichenified patch is found in a patient who presents no other sign of eczema whatsoever and it is for this type of lesion that the term localized neurodermatitis or the French term *neurodermite* should be reserved.

This condition shows a predilection for certain sites, particularly those of easy access to the fingers of the right hand (in right-handed people) though many scratchers are ambidextrous. These sites include the extensor aspect of the left forearm, below the elbow, the outer side of the right lower leg, and the palms. In women, but rarely in men, a favourite spot is the back of the neck, at or in the edge of the scalp and extending down the neck. Other sites may be chosen, however, depending possibly on some trivial local factor. Thus it may be initiated by a septic spot leaving a residual sensitive area or a scar. In one patient it developed over a small area of leucoderma, probably because the patient had got into the habit of fiddling with the spot. I think many cases of pruritus ani or pruritus vulvæ belong to the same category, some minor anal or vulval irritation starting the scratching which then becomes self-perpetuating. There are of course many other factors involved in itching in these latter areas and the scratching habit may graft on to one or more of these.

In general the condition occurs in those who are under some form of nervous tension, and patients often say that the eruption is worse when they are under stress; they also often admit to scratching when they are preoccupied or concentrating on work.

Lichenification is recognized by the thickening and dusky colour of the skin which is often a little burnished, with exaggeration of the natural lines. This may happen in any chronic eczema and it is only when it occurs as an isolated circumscribed lesion that the diagnosis of 'neurodermite' should be made. Occasionally warty lichen planus may look very similar, but the surface is more granular, there may be a slightly purplish colour and careful examination of the whole body may reveal typical lichen planus spots elsewhere. The possibility of an exogenic irritant must always be remembered. A patch on a lady's neck may be due to nail varnish and the habit of rubbing the area with the back of the nail; one on the back of the neck may come from the metal of a zip fastener, whilst I have twice seen patients with lichenified patches below the elbows due to sensitivity to Rexine on an armchair.

The lesion is an indication of stress and this must always be sought for and tackled. There are 2 outstanding local applications—*tar and hydrocortisone.* Hydrocortisone is cleaner and relieves itching, but is more expensive; it is best used as the non-greasy ointment in 0·5 to 1·0 per cent strength. Tar is dirty, but I think has a more curative effect; it is usually applied as a paste, but in severe cases I have used the crude Pix Carbonis Prep. as a paint. A more elegant and cleaner paint is Tar 'Dermament' (Parke Davis), in which

the tar is dissolved in a lacquer. Sometimes occlusion by a 'Viscopaste' or 'Coltapaste' bandage is needed to stop the scratching. Finally it is one of the most suitable skin conditions for X-ray therapy.

REVIEWS OF BOOKS

Fractures and Dislocation—By GEORGE PERKINS, M.C., M.Ch., F.R.C.S., Consulting Orthopædic Surgeon, St. Thomas's Hospital, London. Consulting Surgeon, Rowley Bristow Orthopædic Hospital, Pyrford, 1958. Illustrated, 363 pages. (The Athlone Press, University of London). Distributors in India, Messrs. Orient Longmans Private Ltd., 36-A, Mount Road, Madras-2. Price : 57s. 6d.

This book is meant for the general practitioner to help him to treat many of the common and simple fractures. Some fractures require the help of orthopædic surgeons but many could be treated by the general practitioner if he knows the fundamentals of fractures and the methods of putting them right. The author has divided the fractures as one star fractures, two star fractures and three star fractures. In his opinion, the one star fractures can be safely and competently treated by the patient's own doctor; the two star fractures are within the province of any doctor who has access to a hospital and an operating theatre and the three star fractures should be left entirely to the orthopædic surgeon. In this very well written book the author deals with the different kinds of fractures, the Principles of Treatment of a Fracture, Treatment of a Fracture into a Joint, Open Fractures, the Immediate and Remote Complications of a Fracture and the Fractures of various parts of the body. Opposite most fractures, the author has put the stars mentioned above, either one or two or three. The book is very well illustrated with photographs, drawings and X ray pictures. There are 255 illustrations, over 2/3rds of which are radiographs drawn from the author's own hospital records. We recommend the book to all general practitioners.

Human Embryology for Medical Students—By Dr. S. R. NAIR, Head of the Department of Embryology, Topiwala National Medical College and Nair Hospital Dental College, Bombay. Second edition, 1958, illustrated, 316 pages. Messrs. Popular Book Depot, Lamington Road, Bombay-7. Price :- Rs. 15.

Great emphasis is now being placed on embryology in the medical curriculum in modern days. As mentioned by Dr. Paul Baesich in his Foreword, "Embryology provides not only an essential bridge between comparative and human anatomy, but also enables the student to approach the many apparently haphazard structural features of our body in a logical and orderly manner." Dr. Nair's book is chiefly intended for medical students. Within a very limited space it gives the fullest possible description of the many varied developmental abnormalities. There are chapters on "Male and Female Reproductive Organs," "Cleavage and Germ Layer Formation," "The Fœtal Membranes," and development of the various systems. There is an appendix on Sex Chromatin. Dr. Nair who has considerable experience in the teaching of this subject has written the book in a very concise and clear manner. He has made a difficult subject, very interesting. The book is profusely illustrated with line drawings and is well printed. We recommend the book to medical students.

Care of the Premature Infant—By EVELYN C. LUNDEEN, R.N., Supervisor, Premature Infant Station, Sarah Morris Hospital of Michael Reese Hospital, Chicago and RALPH H. KUNSTADTER, M.D., F.A.C.P., F.A.A.P., Attending Pædiatrician and Vice-Chairman, Department of Pædiatrics, Michael Reese Hospital, Chicago, 1958, illustrated. 367 pages. (Pitman Medical Publishing Co. Ltd., 39, Parker Street, London, W.C. 2). Price : 60 sh. nett.

This book is bound to be very useful to those who are concerned with the care of the premature infants. Beginning with a chapter on "The Premature Infant" it proceeds to enumerate the requirements of the premature infant. The next chapter is devoted to "Nursing Routines." Then we have a chapter each on "Feeding and Feeding Techniques," "Vitamins," and "Therapeutic Procedures." The chapter on Pathological Conditions and Their Treatment contains a very detailed description of the various conditions which the practitioner may have to encounter in the course of his general practice. This is a very useful chapter. There is a chapter at the end dealing with the "Home and Follow-up Care." Such special subjects as Jaundice, Pulmonary Hæmorrhage, Antibiotic Therapy, Oxygen Therapy, Management of Erythroblastosis Fetalis are given special attention. The book is well printed and beautifully illustrated. It is a sound, up-to-date and authoritative presentation of the subject. We recommend it to all general practitioners.

BOOKS RECEIVED

Secrets of Indian Medicine—By Dr. R. S. AGARWAL. Pp. 173. Dr. Agarwal's Eye Institute, 15, Daryaganj, Delhi, Price: Paper Rs. 4. Calico Rs. 5.

The Eastern Pharmacist, Nov. 58 issue. 8-A, 56, W.E. Area, Karol Bagh, New Delhi-5.

A Synopsis of Surgery—By SIR CECIL P. G. WAKELEY. Pp. 650. John Wright & Sons Limited, Bristol, 4. Price : 37s. 6d.

PREPARATIONS AND INVENTIONS

Varidase Buccal Tablets

A buccal tablet which is claimed to reduce inflammation and swelling due to trauma or infection has been introduced by Lederle Laboratories Division, American Cyanamid Company. It is an enzyme product and is used in the treatment of abscesses, burns, cellulitis etc. It is mint-flavoured and is allowed to dissolve in the patient's mouth and is absorbed into the body. The usual dosage of Varidase Buccal Tablets is said to be one tablet 4 times a day for a minimum of three days, under the guidance of a physician.

Each Varidase Buccal Tablet contains 10,000 units of streptokinase and 2,500 units of streptodornase. The product is supplied in bottles of 24.

Further particulars can be had of: Messrs. Lederle Laboratories Ltd., P.O. Box 1994, Bombay-1.

Gasex

Gasex is stated to be a combination of various reputable ancient Indian herbs known to have effect on the function of the gastro-intestinal tract. It is claimed to be useful in various types of dyspepsias, hyperacidity, digestive insufficiencies and fullness after meals. Gasex controls biliary secretion and this helps to revert the gastric secretion to as near as normal thus correcting the defect.

Dosage : Adults 2 to 3 tablets after meals.

Gasex is manufactured by The Himalaya Drug Co., 251, D. Naoroji Road, Bombay-1.

A New Hallucinogenic Drug

A new hallucinogenic drug has been isolated by M/s. Sandoz Ltd., Basle, Switzerland. This is the result of pharmaceutical research on a Mexican mushroom. Scientists at the Sandoz Research Laboratories cultivated a particularly active species. With the aid of modern methods the active substance from the fungal matter was isolated and the new psilocybin was obtained as a pure white

crystalline powder soluble in water. Chemical studies show that this drug contains phosphorus and is a derivative of indole. In their personal experiences the Sandoz team has found that minute amounts of psilocybin induced a state of intoxication associated with bodily relaxation lasting for several hours. It is also discovered that this state of intoxication completely disappears within a few hours leaving no after-effects. This isolation may perhaps start a new chapter in the treatment of mental disorders.

Further particulars can be had of M/s. Sandoz Products Pr. Ltd., Scientific Department, 3 Witter Road, Ballard Estate, Bombay 1.

NEWS AND NOTES

Indian Scientist Discovers Anti-tumour Compound in America

Dr. K. V. Rao of the Cancer Research Centre operated by the Pfizer Company is said to have isolated and concentrated an anti-tumour compound which is active against some forms of cancer in animals. The drug, designated as E 73 was described before the Medicinal Chemistry Section of the Annual American Chemical Society meeting held in Chicago.

Health Statistics Seminar

The Hon'ble Mr. D. P. Karmarkar, Health Minister of India inaugurated the South East Asia Regional Seminar on Health Statistics at Delhi on the 13th October '58. Dr. C. Mani, Regional Director for WHO's South East Asia region was in the Chair. 18 statistical experts from 8 countries—Afganistan, Ceylon, India, Indonesia, Nepal, Portugal and Thailand participated in the Seminar.

Pædiatrics Conference

The Annual Conference of the Associations of Pædiatricians of India will be held at Jaipur from 18th to 22nd January, 1959. Dr. Robinson, W.H.O. Adviser on Maternity and Child Welfare will preside at the Conference.

All those who wish to present papers at the Conference should submit *two typewritten copies of their paper along with a summary not exceeding two hundred words to the undersigned by the 1st December, 1958* Only papers accepted by the Editorial Board will be placed on the Agenda and its decision shall be final. The authors will be informed by the 1st January 1959 whether their paper has been accepted or not, and if accepted the day and time fixed for its presentation. Not more than 15 minutes will be allotted for the presentation of the paper and exhibition of slides and other material.

When submitting papers please inform the undersigned how many slides you wish to project and the size of the slides.

Those attending the Conference will be allowed a concession in railway fare —single fare for return journey. Concession forms will be available from Dr. J. B. Mehta, Jt. Organizing Secretary, Sawai Mansingh Medical College, Jaipur in December. Arrangements are being made to accommodate the delegates in the Government Hostels at a very reasonable cost.

For further particulars please write to :—V.D. ARORA, *Honorary Secretary*, "Backbay View," New Queen's Road, Bombay-4.

Khandelwal Collaborates with Asta

Messrs. Khandelwal Laboratories has now entered into a collaboration with Messrs. Asta-Werke, West Germany. Asta-Werke, whose products are being prescribed in 72 countries, will provide technical research information and formulation know-how. This information will be applied by Khandelwal's Technical Service Bureau to local conditions prior to its use in the manufacture of Asta products by Khandelwals.

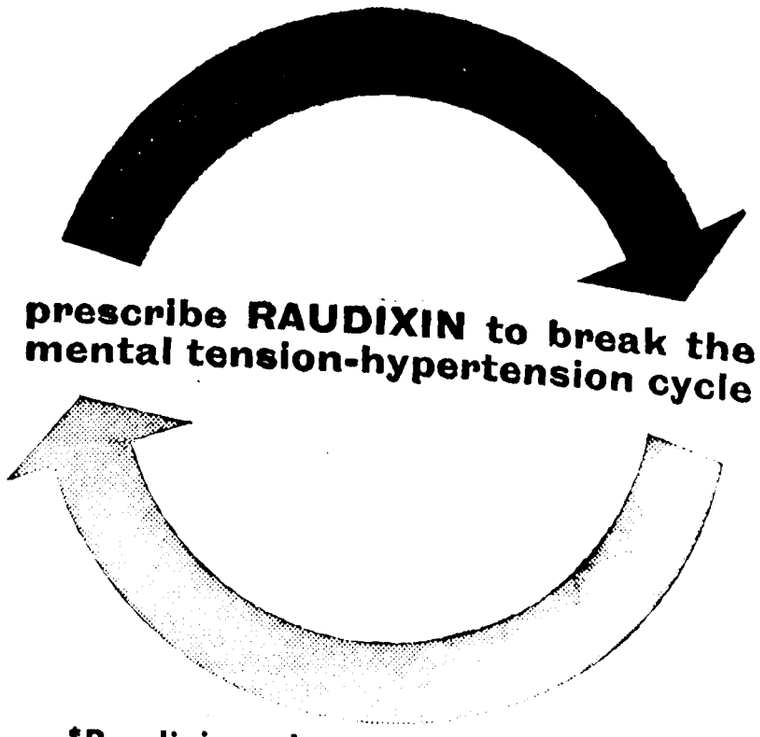
NOTIFICATION

Publication of
Madras Medical Register, 1958

Registered medical practitioners are requested to intimate their current address urgently.

111, Mount Road,
Madras-6,
13th Nov., 1958.

Sd. K. K. SHENAI,
REGISTRAR, MADRAS
MEDICAL COUNCIL



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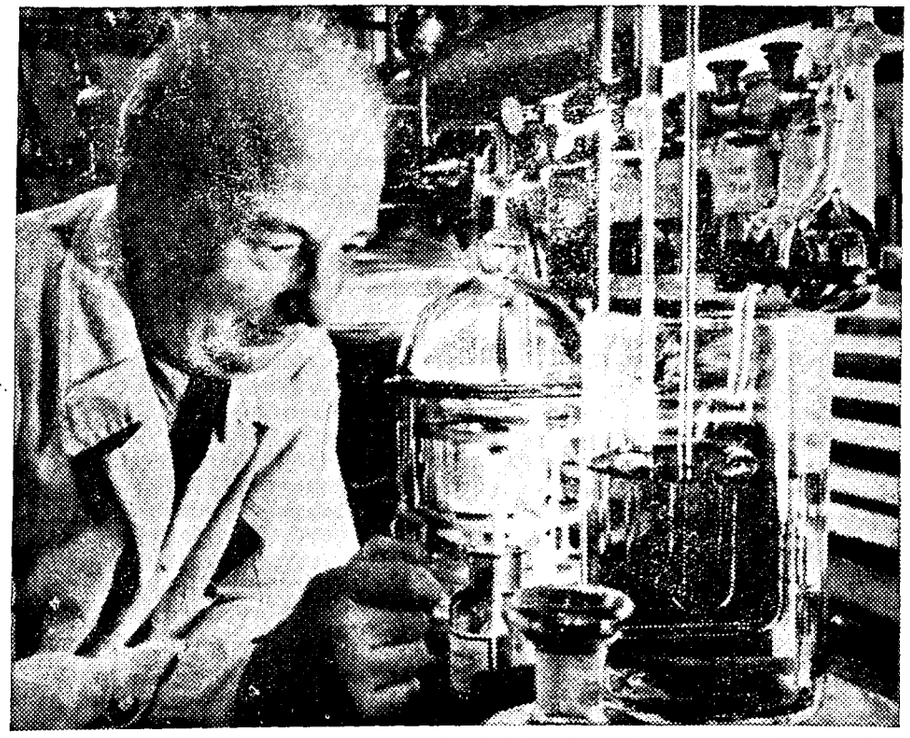

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