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The Antiseptic

A Monthly Medical Journal

Edited by

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

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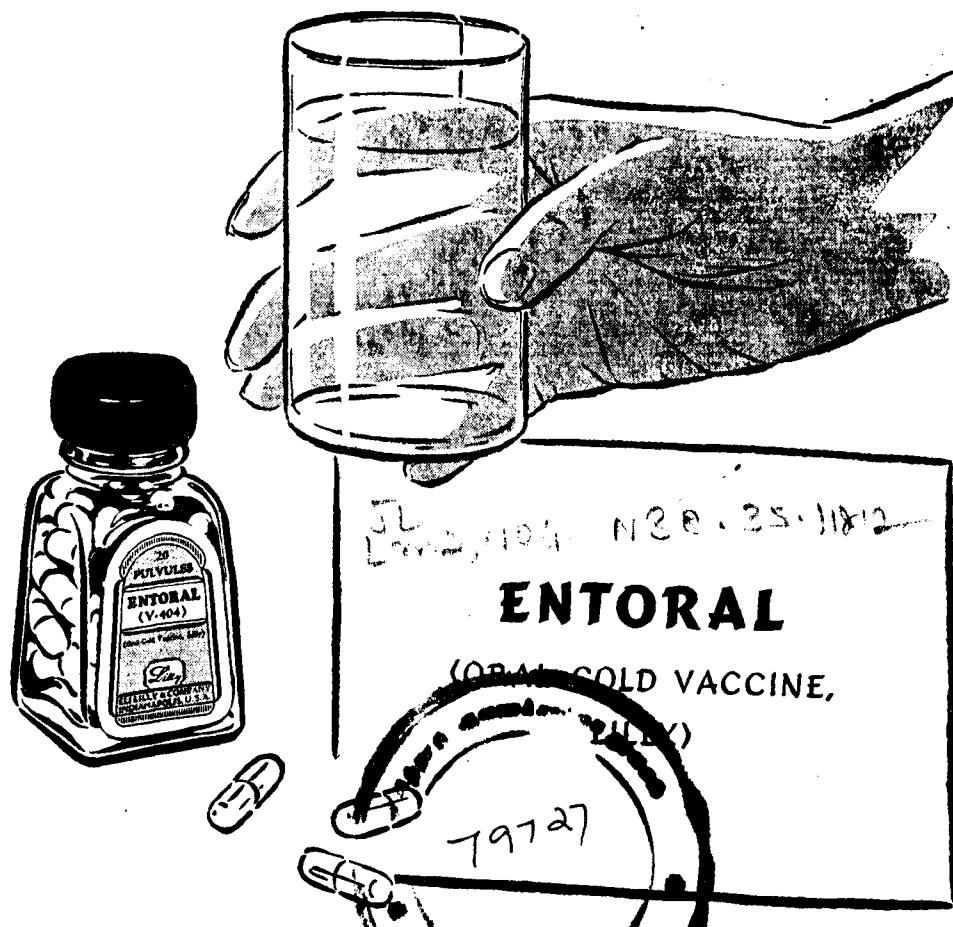
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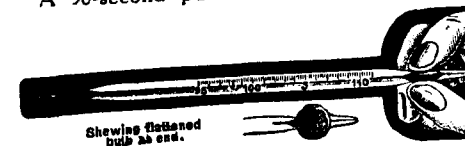


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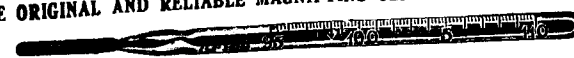


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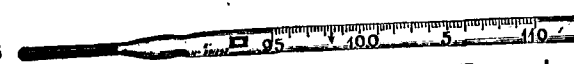
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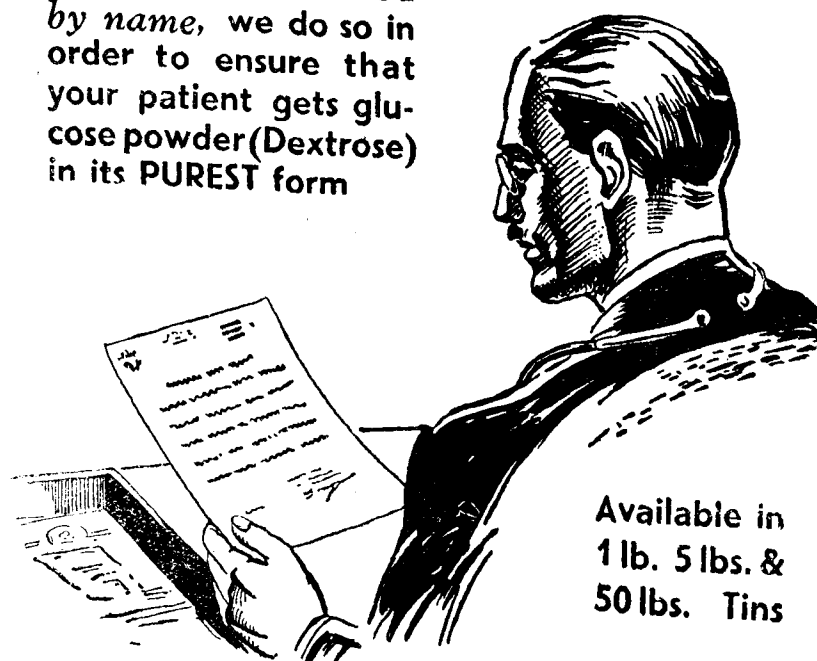


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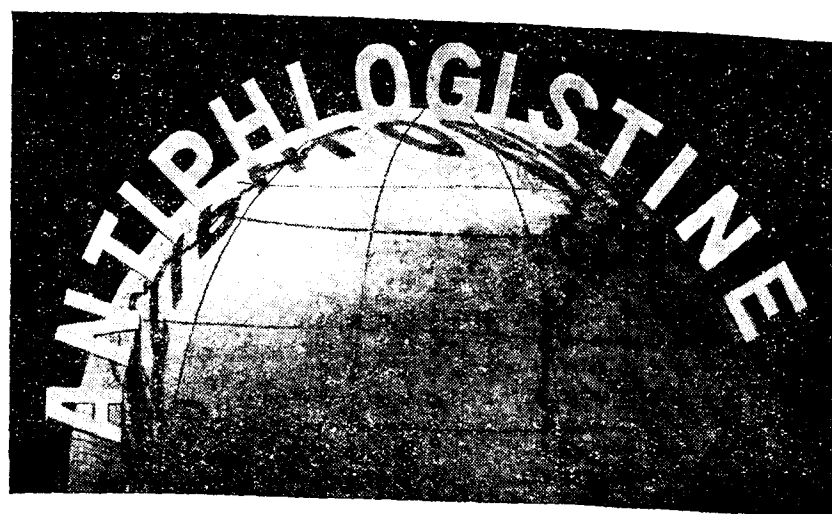
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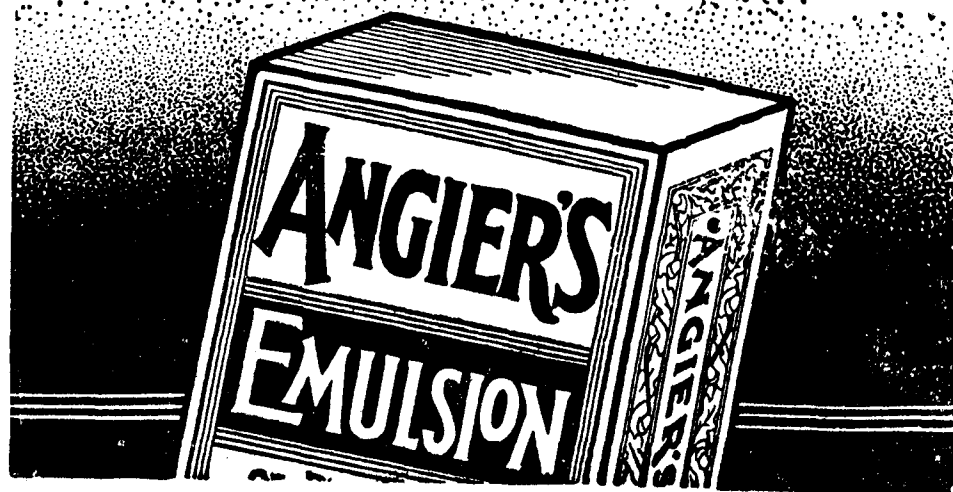
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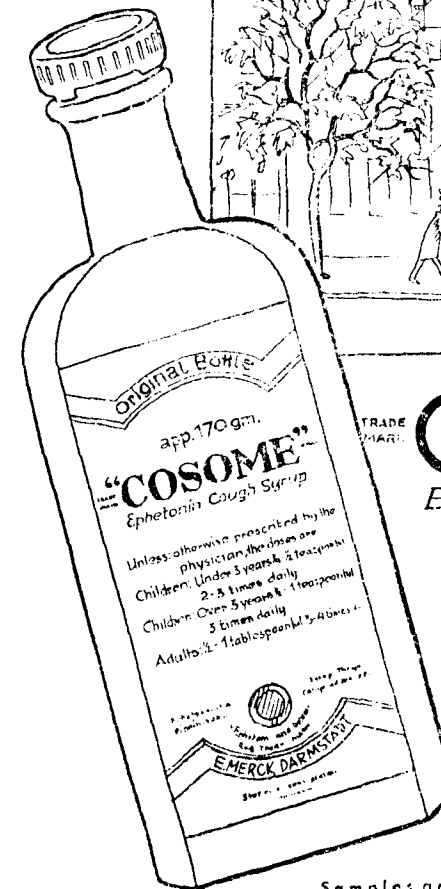
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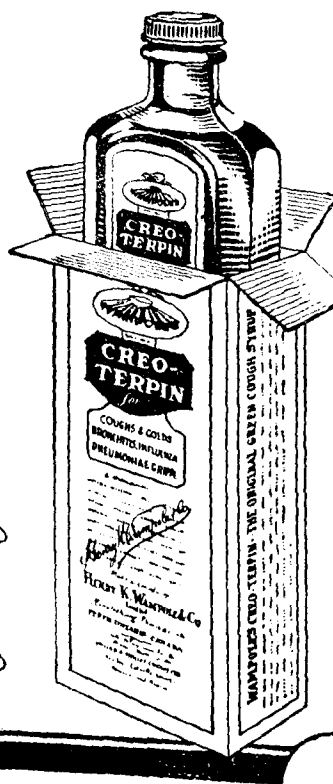
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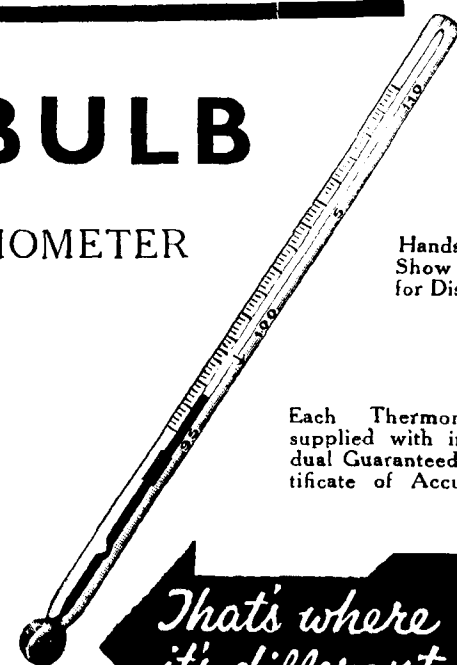
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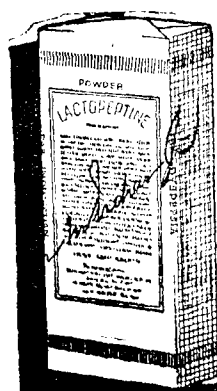
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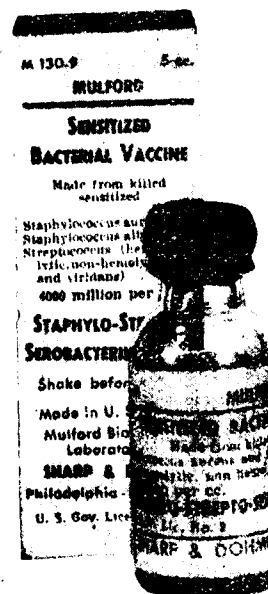
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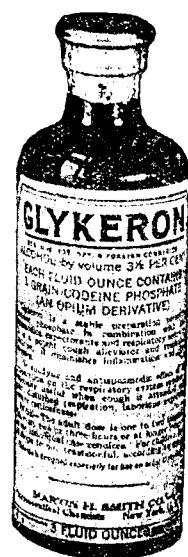
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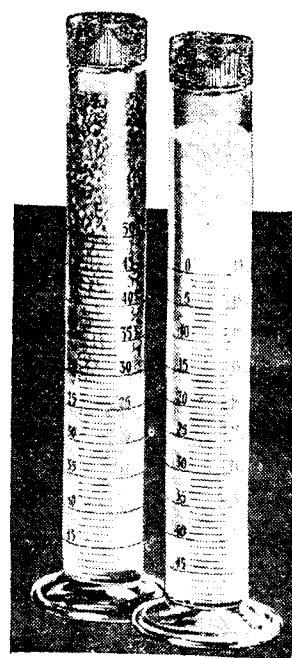
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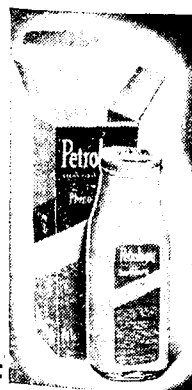
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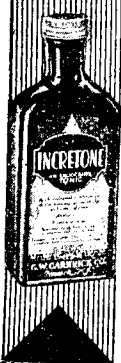
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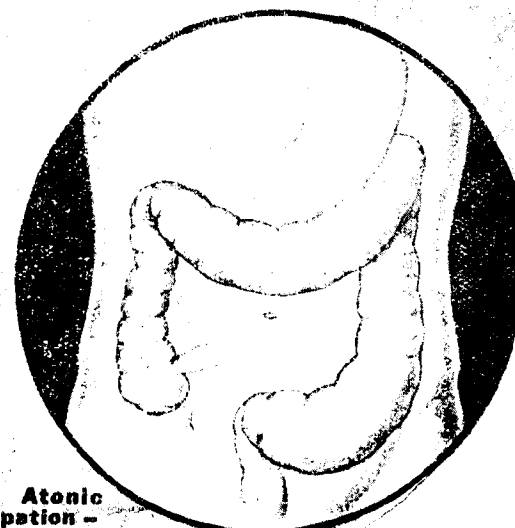
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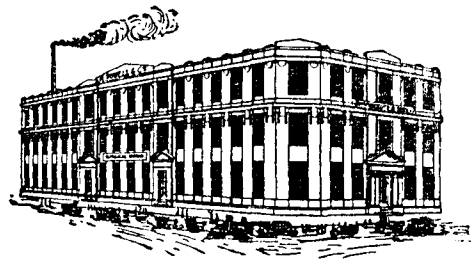
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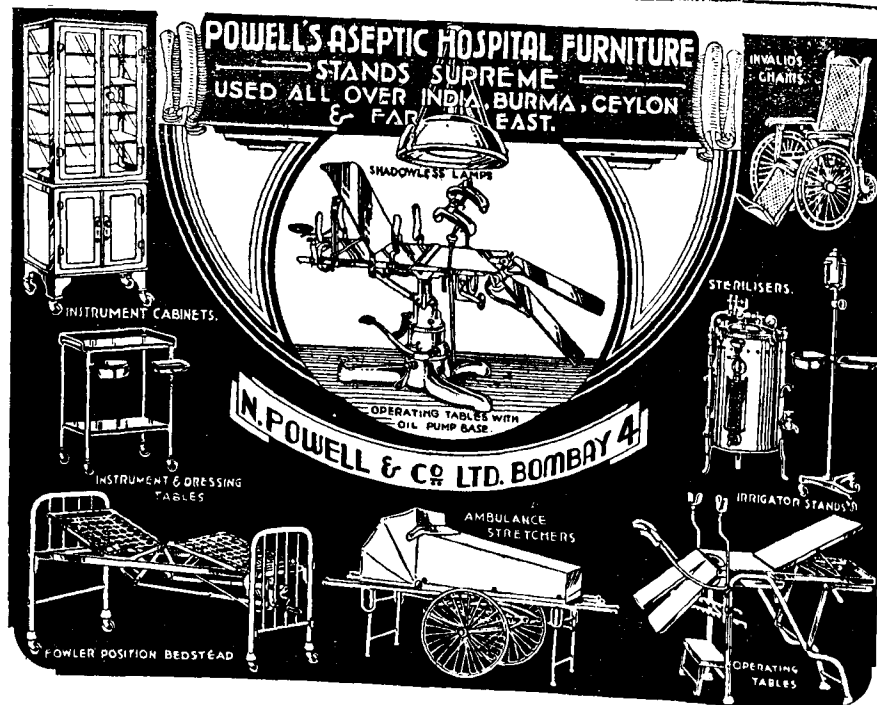
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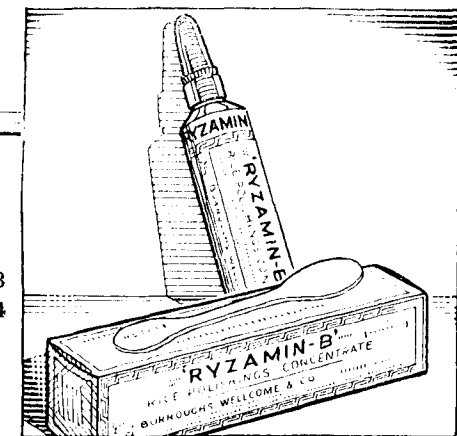
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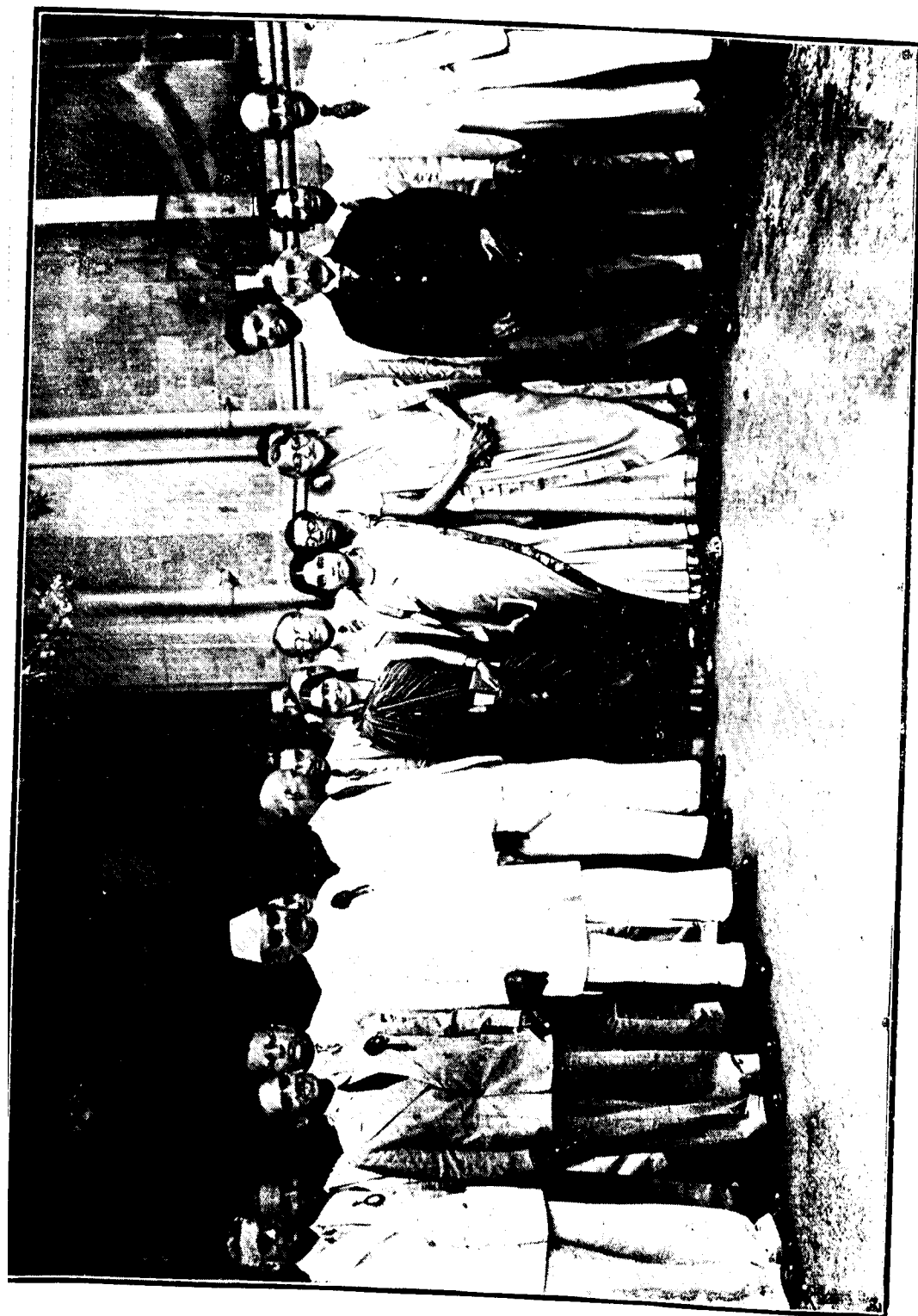
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ORIGINAL ARTICLES

Some Recent Views on the Gonococcus and Gonococcal Infections*

BY

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AND

R. Balachandran Tampi, M.B., B.S.

PART I.

THIS article is mainly based on the critical report of the Committee for Survey of research on the gonococcus and gonococcal infection, issued as a supplement to the American Journal of Syphilis, Gonorrhoea and other Venereal Diseases (No. 1—Volume 20—January 1936) with a few comments based on our experiences and observations. Considering the rapid strides that have been made in the various other branches of medicine and surgery, it is an accepted fact that far less interest is evinced in the investigation of Venereal Diseases, Gonorrhoea in particular. A review of the literature shows that scientific interest in the study of Gonorrhoea has suffered more from periods of stagnation than of activation. Thanks to the

* Specially contributed to "The Antiseptic"

encouragement given by the American Venereologists and public health authorities, whose enterprise in this field has been singularly noteworthy.

We do not intend to discuss all the lines of research that have been done on this subject. We have purposely omitted any remark on the accepted views and undoubted conclusions. Our endeavour is only to pick up some of the most practical points. Some of the views may still be premature or lack confirmation by all workers. Valuable work has been done on the cultural and other diagnostic methods of Gonorrhoea. It is an admitted fact that in spite of all the researches our knowledge on many phases of this disease is still in a state of nebulous confusion. An experimental animal has not been found out to further our studies. Unless such an animal is obtained our knowledge of some of the vital problems on gonococcal infection will be very imperfect.

In the morphological studies of the gonococcus, it is conclusively settled that the organism is a strict human parasite and gonococcal infections are thus limited to man. Recent researches have confirmed the fact that the appearance of the organism in exudate is constant and characteristic. Besides the conventional diplococcoid forms, single and tetrad forms are described. Koch and Cohn (1928) have described "Micro" and "Macro" forms of gonococci which according to them are "involution forms" or "degeneration forms." It is also suggested by some, of the possibility of these unusual forms "representing morphological expression of growth phases." Szilvasi has described the development of a typical form of gonococci with aging of cultures. He attributes the influence of environmental factors to this pleomorphism. Some have described "elongated forms" and "X" forms. Herrold in his article on the "altered environmental gonococcal forms and the probable mechanism of cure in Gonorrhoea" suggests that "more recently the trend of explanation has been towards the view that the altered forms are the result of adjustments to an unfavourable environment." The studies of the variability of other bacterial agents have given us useful data in the knowledge of diagnosis, serology, immunology, epidemiology control and treatment of infections caused by them. As such it will be a fruitful research to investigate the gonococcus on these lines.

It has long been supposed that gonococcus possessed a capsule, but the majority of the present-day opinion is against

it. The capsule formation is attributed by some to errors in technique of preparing smears, and in fixing and staining. However, the difference in appearance of specimens stained with Gram's Method and methylene blue remain unexplained. It is thought that if encapsulation occurs it will have some relation to the peculiarities of the gonococcus.

The formation of metachromatic granules and Polar bodies have evinced a renewed interest recently. These granules are described in stained specimens both inside and outside the phagocytic cells containing gonococci. Their origin is not yet settled. The "Polar bodies" especially have been centrifuged, isolated and a therapeutic vaccine prepared out of it, which has however no relation to "ectogenic suspensions" of Ferry and Shwartzman. It has been noted that these polar bodies are developed in plenty when gonococci are grown in a medium very rich in nucleo-protein. The further investigation into the formation and nature of these bodies may perhaps give us some clue to the immunity mechanism in Gonorrhoea.

Much work and discussion have centred around the tinctorial properties of gonococci. Many workers have reported gram-positive diplococci in the exudates which were clinically proved cases of Gonorrhoea. Cultures containing gram-positive diplococci are also reported. Based on the thorough study of literature, the Committee in their review suggest "a careful reinvestigation of the staining properties and its variants." Gram-positive diplococci have been described both in acute and chronic gonorrhoeal urethritis by Nicolle, Delbanco and Lorentz. Kandyba succeeded in culturing gram-positive diplococci from another culture of gonococci at 40 degrees C. These organisms, however, were not reconvertible into gram-negative types. Ramsine and Milochevitch report that gonococci when treated with protargol and heated to 42 degrees C. for two hours yielded gram-positive organisms while Gohving produced gram-positive diplococci by the influence of lithium chloride or Pancreatin in ascites-broth after incubating at 37 degrees C. Lewin cultivated gonococci in Hibleris brain-puri medium on the basis of Eisenberg's idea that gram-positiveness depends upon a greater lipid content of the bacterial cell. He found that in old cultures the gonococci sometimes became gram-positive. Raven claims that "typical gonococci could be derived by reversion from the gram-positive bean shaped diplococci when cultivated on a medium containing anti-gonococcus serum." Alteration in the staining character of Gonococci has been observed by us in

the following types of cases. (1) Conjugal Gonorrhoea; (2) Gonorrhoea treated with silver salts; (3) Carrier state without any clinical evidence of disease; (4) Mild cases which respond to treatment quickly and (5) Cases treated with Sulfanilamide or allied compounds.

Difficulty in laboratory diagnosis is sometimes met with by the presence of gram negative Strepto- and staphylococci in exudates. Storer is of opinion that the fallacies of the Gram's reaction become more operative in the field of gynaecological diagnosis. In case of doubt, and to obviate technical errors in the staining of exudates, Stearn and his co-workers have shown the value of performing the Grams technique at a controlled reaction of pH 4.0. By this standardization of the method, a successful differentiation will be found possible. Churchman points out three pitfalls in assessing the staining reaction of the organism. He showed that the Gram reaction is "Stable" with some organisms and not with others. Another fact is that there are so many gram-negative genito-urinary diplococci which are not gonococci. Thirdly, he believes that there are many evolutionary forms of gonococci which are not gram-negative. It is impossible at this stage to come to any definite conclusion on the subject.

Wychemann and Schlunk, in confirming the observations of Debanco and Lorentz on the clinical behaviour of gonococci, attempted to throw some light on the practical significance of this problem. They are of opinion that the change in staining from gram-negative to gram-positive is associated with a diminution of virulence. They think that the many reports of gram-positive "Strepto" and "Staphylococci" reported in smears from less acute and chronic cases of Gonorrhoea are perhaps only evolutionary forms of gonococci which have taken gram-positive stain.

It is not proposed in this paper to review in any detail the plethora of literature that has appeared from time to time regarding the various physical and chemical factors which are necessary for the proper growth of gonococci in artificial media. The optimum temperature of incubation, osmotic pressure, the pH. of the media, gaseous tension, especially that of carbon-dioxide, the need for aminoacids, and other necessary substances and electrolytic buffers, not to mention the host of other factors, have all been investigated into. Unanimity of opinion is lacking on these points.

This takes us on to the different artificial media that have

been tried for the culture of gonococci. Various liquid media including blood agar media, ascitic or hydrocele fluid media, egg media, meat infusion media and media containing vegetable extracts are those commonly used in experimental work. In brief, one has to say that a selective medium for the gonococcus has yet to be discovered.

Little research has been done to study the biochemical activities of gonococci in vitro. What Elser and Huntoon observed in 1909 regarding the sugar reactions remains even today distinctive and characteristic, which helps in the differentiation of gonococci from other gram-negative cocci.

A very useful advance in recent times is the introduction of the Oxidase test which is only a method for the differentiation of gonococcal colonies from other bacterial colonies in culture plates. This was first described by Gordon and Mcleod in 1928 and attention was drawn to it in the diagnosis of gonococcal colonies only recently. The test is performed by adding an oxidising stain to the culture media. In the presence of the stain the colonies take on a particular hue rendering easy identification. Elling-Worth recommends a 1% aqueous solution of tetramethyl-para-phenylene-diamine-hydrochloride as the identifying agent. In the presence of this gonococci appear in bluish colonies. The consensus of opinion regarding the value of the test may be summarised in the words of the report of the Committee based on the work of Mcleod and his collaborators "that it greatly facilitates the recognition of the gonococcal colonies in such material and is a real saver of time."

Many workers have carried out experiments to find out whether an "antivirus" as such exists for the gonococcus. Finkelstein and Timochina have shown that such a thing does not exist. The Committee in their review of the literature concludes that even if such an antivirus exists, it does not satisfy all the postulates of Besredka.

Despite considerable amount of recent work on the nature of toxins elaborated by gonococci, our information regarding the same is meagre and positive statements are unwarranted. It is even now doubted whether gonococci really produce an "endotoxin." Tulloch discussing the subject of toxin production says that "in the first place it is to be emphasised that no investigator has so far succeeded in demonstrating the production in vitro of a true exotoxin by the organism... Much work has been published dealing with the lethal and toxic action of dead cultures and of auto-lysates of gonococci, but it is very

doubtful indeed notwithstanding the very ingenious methods which have been employed, whether anything really approximating that very elusive substance the true endotoxin of this micro-organism, has yet been obtained." The recent biologic approach in the elaboration of a gonococcal anti-toxic serum perhaps shows that gonococci produce some toxin whether endo or exo.

The formation of a bacteriophage by the gonococcus is still a matter of speculation. Pelouze and Schofield in 1927 reported their studies on a substance which they thought to be of the nature of a gonococcal bacteriophage. The recent favourable clinical reports with "Neisso-lysate" therapy is worthy of mention here, because of the fact that the substance is prepared by the action of a bacteriophage on gonococci in a fluid medium. It has also been reported that in the course of aging of a culture of gonococci on media containing human exudate, a substance is produced which will lyse gonococci. No reports are available regarding successful elaboration and isolation of this substance or any proof of its existence in vivo. Eaton and Bayne Jones concluded from a review of a published report that the existence of a bacteriophage for gonococci has not been established.

Typing gonococci on a serological basis like other bacteriae was attempted recently. Torrey and Buckel in 1922 employed agglutination reaction in their extensive investigation in this direction. It has been found that gonococci cannot be distributed among clear cut serological types. Tulloch observes that "there is a predominant type of gonococcus comprising regular and intermediate sub groups which constituted about 70 per cent of all strains which are responsible for the causation of Gonorrhoea." The Committee in their review mentions that "this has important consequences." "It tends to discountenance the idea that special types of gonococci cause special types of gonococcal infections. The same general type of organism may be encountered in endo-carditis and arthritis. Furthermore it leads to the assumption, borne out by later experimental work, that the use of a few representative strains in antigens for complement fixation tests or for vaccines for immunisation may be as satisfactory as the use of twenty or thirty strains."

Results of the greatest significance have been yielded to the physician, by the studies of the influence of environmental factors on gonococcus and its viability. Though definite evidence is not forthcoming it has been observed that different

strains showed considerable variation in the effect of dessication. One important fact that has been brought to light by studies of many workers is the connection between the resistance of the strain to changes in temperature and the clinical course of the case from which it is isolated. Tulloch found out that gonococci are susceptible to ultra-violet rays exposure. Resistance to hard X-Rays has been reported by Cohn and Levy of old and recently isolated gonococci.

The influence of chemical agents has received closer studies recently. Setting apart some of the facts of theoretical interest nothing of therapeutic importance has come from these researches. Gonococci show a marked susceptibility to silver compounds. Among recent papers there are no accounts of attempts at improving the old silver nitrate and protargol, the most widely used silver compounds. Of the oxidising agents, potassium permanganate is found to act best. Experiments were conducted on chlorine compounds with no remarkable success. Organic mercurials especially the phenyl-mercuric compounds have been most recently investigated by Weed and Ecker and by Birkhang. Hexylresorcinol and Pyridium are said to have definite gonococicidal action in vitro. Their utility in vivo is not proved. Of all substances Trypaflavine and certain acridine compounds are considered to have the greatest anti-gonococcal effect. The role of sulfanilamide is discussed later.

The problem of phagocytosis has received some attention recently. The polymorpho nuclears play the predominant role. It has been observed by all workers that in smears of exudates the organisms are not evenly distributed among the leucocytes. Some cells contain numerous gonococci while others do not contain any. This observation has led to the suggestion that gonococci are capable of invading the cells and multiplying therein. Storer confirmed by experiments that gonococci, unlike other pyogenic organisms, are not destroyed by phagocytosis. Thus intra-cellular gonococci are still viable. It has also been observed that phagocytosis is mostly a surface phenomenon and in the deeper layers of the genital mucous membrane, the gonococci are mostly found extra-cellular. It would appear that phagocytosis plays but a minor role in the cure of the disease. (Pelouze.)

There is still doubt regarding the fundamental knowledge of the pathogenicity and virulence of gonococci in human beings in general. The literature reflects the opinion held by many workers of long experience that gonococci may not be pathogenic to

all human beings. The Committee further observe that "reasoning from analogy with other organisms, it seems probable that there are fluctuations in virulence of the different strains of the gonococcus, but when and where they occur, and what relation they bear to changes, in the other circumstances of its life, cannot be known until our studies can be performed on far more carefully controlled material." Such a study may perhaps give us a clue to the varied clinical pictures we see with regard to this disease.

Many of the problems in the study of gonorrhoea will perhaps remain unsolved until it is possible to reproduce the infection in any of the lower animals. None has yet succeeded in this field. The review states that "in our opinion this is a problem of major importance, the solution of which will permit a rapid and substantial advance along many lines of research."

It is easily seen by careful perusal into the vast amount of literature on gonorrhoea, that the major part of the work has been devoted to the study of the peculiarities and nature of gonococci. Excepting for the advancement in the methods of treatment, research into the clinical aspect of gonococcal infection has not been altogether very encouraging. Still, some new facts have been added to our clinical knowledge.

Of late, many cases of gonococcal proctitis occurring by direct extension as the most common type of extra-genital infection have been described, particularly in women. Such infections in men are invariably due to sodomy. Even stenosis of the Sigmoid flexure as a late result of such infection has been reported.

Shwartzman found that a bacteraemia may occur without metastatic complications. Blood cultures have brought to light a greater incidence of gonococcal septicæmia.

Arthritis still ranks the commonest of the many metastatic complications. The modern tendency is to attribute an allergic hypersensitivity to gonococcal toxins as the causative factor of this condition.

"Recent investigations of the occurrence of ophthalmia neonatorum and the efficacy of the usual prophylaxis based upon instillation of silver nitrate into the conjunctival sac have indicated that improvement can be made in the methods of control of this disease." It is our experience that this complication in the South Indian infants is not such a formidable or frequent occurrence as is usually described by European writers. Considering the very high incidence of untreated gonorrhoea in the

females of the child bearing age, the occurrence of ophthalmia neonatorum in the new born infants of these infected mothers is neither alarmingly frequent nor blindingly severe. When the complication does occur in the infant it is usually a very mild inflammation responding rapidly to ordinary local treatment. Hence it is our opinion that gonorrhoeal ophthalmia is not one of the chief blinding diseases of childhood in this country. For ocular instillation a half percent solution of silver nitrate is recommended by Lehrfeld being less irritating than the original one percent solution.

Of the skin lesions in gonococcal infections stray reports of keratoderma—blennorrhagicum have appeared. This is a rare complication in its typical form, and is considered to be a chronic affection usually associated with arthritis. Successive stages of vesiculation, pustulation and crust formation are seen in the affected parts. Barrett claims to have demonstrated gonococci in such lesions. It is generally accepted now that this is a reaction to the absorbed bacterial products.

In female gonorrhoea a theory has been propounded that gonococci are incapable of surviving to a long extent in the adult vagina. King and Mascall (1935) have however studied this problem by improved methods of isolating gonococci, and concluded that "gonococci infection of the vaginal mucous membrane not only occurs in the acute stage of gonorrhoea but also persists in chronic forms in the later stages of the disease". They proceed to say that "the theory of antigonococcal value of highly acid vaginal secretion in the adult must be abandoned."

Much attention has been devoted to the study of vulvovaginitis in children. Ruys advocates cultural methods as far more suitable in the diagnosis of this condition than mere examination of the smear. Brunet and Tolle consider gonococcal cervicovaginitis in young girls as a self-limited infection. That paragenital infections are equally important in prolonging the disease has been observed by Dolszay. The view held by Pearce in 1915 that children are infected by a special strain of gonococci lacks confirmation. The presence of Doderlein's bacillus is thought by some workers to act as a preventive and curative agent in vaginitis of children. Till recent years the cervix of the child was considered relatively immune to gonococcal infection but endoscopic studies have shown that the cervix also shares in the majority of vulvo-vaginal infections. More light has been thrown in the therapy of vulvo-vaginitis of children by the recent introduction of hormone products. The histological difference of the

vaginal mucosa of the adult and immature infant has been the basis of this new discovery. The aim is to convert the easily susceptible infant's vaginal mucosa into that of the adult. Many preparations of these oestrogenic hormones have appeared in the market under different names both for parenteral and oral use. Theelin, amniotin, Progynon Boleosum, Oestroform, Menoformin etc., are some of them. Uniform success has been reported by different workers. The dosage for the drugs which are standardized and biologically assayed in rat units have to be individualised for each case depending upon the clinical response. It is advantageous to push the dose till signs of hypertrophy of the sexual organs are seen. Robert M-Lewis and E. L. Adler consider the use of Oestrogenic substances through the medium of vaginal suppositories as the most effective method in children. Better results are reported by them by this method than by the hypodermic injections. Our experience in the hormone therapy of vulvovaginitis has been rather disappointing. Though the immediate results are dramatic, relapses are frequent, no matter what the duration of the treatment or dosage may be. Further we found that the results are better in children under two years, and in children of six or seven years the treatment has been a failure. Almost all the methods of therapy which have found a place in the treatment of adult gonorrhoea have been tried in children but none is reported to be satisfactory.

A very interesting inference has been made by Dooley who after interviewing adult patients who had suffered from gonococcal vulvo-vaginitis in childhood found that gonococcal vulvovaginitis in young girls has few sequelæ in adult life.

In almost all cases of adults the mode of infection is by sexual contact. Innocent infections are found mostly in children. Such infection may be acquired by the direct contact of the infant's genitalia with the maternal passages during delivery especially in a full breech presentation. Sloboziam and Herscovici have reported three cases of gonococcal infection in which no possible portal of entry was found except through the placenta.

Many indefinite statements are made regarding the incubation period of gonococcal infection. To quote Pelouze's view, "from much clinical observation and artificial inoculations reported by Finger and others it is evident that we must consider that our minimum incubation time in gonorrhoea is greater than forty eight hours. It is more often seventy two hours or longer." He also gives us a practical hint in the diagnosis when he

says that "urethral discharges occurring at shorter periods than forty-eight hours are not new infections. Consequently we are safe in stating that no discharge appearing within 48 hours is due to newly acquired gonorrhoea but is a toxin response from the patient's older latent infection." The consensus of opinion regarding the duration of the infection is also very indefinite. Still the majority of the clinicians agree to say that the duration corresponds closely to its topical extension. Pelouze holds that 6 weeks is sufficient for eradication of the gonococcus from non-complicated cases of anterior urethritis in a co-operating male patient by ordinary lines of treatment. It is also found that the duration of the infection may be prolonged in such instances where a latent infection is revived by trauma or surgical interferences for other conditions; and by changes due to the "periodic storm of menstruation" and pregnancy in females.

No hard and fast rule can be laid out for the prognosis of gonococcal infections. Variations in individual susceptibility play an important part. Thus some may get complications while others escape with the mildest suffering. Mayer in 1933 observed that the disease runs a more protracted course in the younger patients and others of poor physique. It is our clinical observation that there is a distinct racial difference in the infection as between the European and Indian. In the former the infection runs a more severe and protracted course. Whether this difference is due to the peculiarity in the habits of the average European (alcoholism) or is determined by certain anatomico-histological peculiarities of the mucous membrane of the urethra in the European remains to be investigated.

(To be continued).

The Operative Treatment of Fistula-in-Ano in Tubercular Patients*

BY

M. C. Verghese, M.B., B.S., (ANDHRA),

*Assistant, Union Mission Tuberculosis Sanatorium, Arogyavaram,
near Madanapalle, South India.*

ALL fistulæ-in-ano occurring in patients suffering from pulmonary tuberculosis are to be considered as tubercular in origin, unless otherwise proved, and must be treated as such. There is at the present day a great deal of difference of opinion with regard to the success of operative treatment of fistulæ in tubercular patients. In the light of existing experience with the operation, some surgeons believe that the cutting with the knife only opens up new channels for the tubercle bacilli to infect, and recurrence of the trouble is common; while other authorities are of opinion that the fistula, associated with chronic tuberculosis, may be surgically treated with considerable prospect of success, provided that the patient is under Sanatorium care. As regards the method of operation, of late some surgeons claim better result by cutting the fistula with the cautery, instead of with the scalpel. They are of opinion that the use of the cautery has got a beneficial influence on the tuberculous infection both in the immediate area and in the area adjacent to the operated tissue. The tissue treated with the direct heat seems to be stimulated to fibrous tissue formation, which is a desirable result. In the surrounding tissues there seems to be induced a type of inflammation that results in the formation of new blood vessels which aid in the nutrition of the local tissues. The cauterization also seals the lymphatics and the blood vessels in the immediate area of operation, thereby preventing a spread of the disease either locally or through the lymphatics or through the blood vessels. But there is a general agreement that conservative treatment for tuberculous fistula-in-ano is of little or no use, and that something has to be done surgically.

At the Union Mission Tuberculosis Sanatorium, Arogyavaram, the method of treatment in the earlier years was the opening up and scraping of the fistulæ, but the results were disappointing, so, later, all fistulæ were treated on conservative lines,

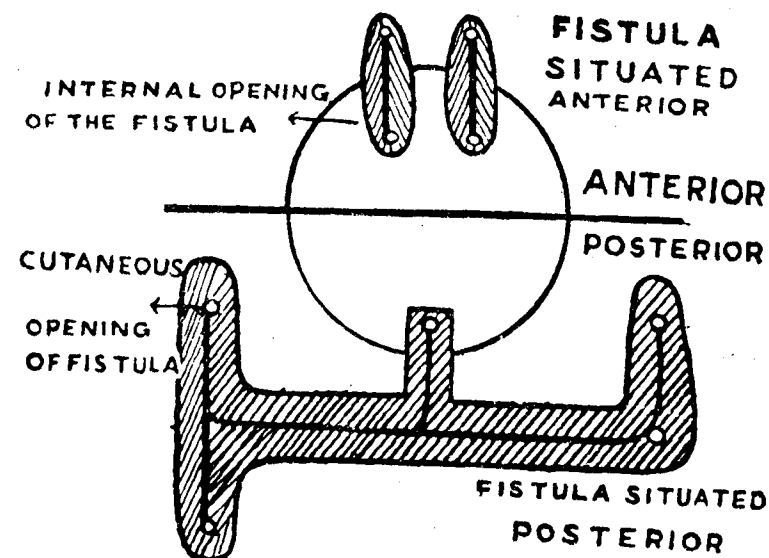
* Specially contributed to 'The Antiseptic'.

in the hope that the rectal condition would heal along with the general improvement of the patient under Sanatorium treatment; but contrary to expectations, these results also were not encouraging, and the patients were subjected to a considerable amount of inconvenience and suffering. However, under these uncertain circumstances, we tried the operation with the knife, at the same time keeping in mind the possibility of resorting to the cautery method, if our experience of cutting tuberculous fistulæ with the knife proved disappointing. The results we have obtained in a series of 26 fistulectomies in 24 cases of advanced pulmonary tuberculosis, are so encouraging that we feel that our line of treatment and the results gained may be of interest to such of those who have to deal with similar types of cases.

Pathology.—Tuberculous infection of ano-rectal region occurs mainly secondary to pulmonary tuberculosis, and only very rarely does it occur as a primary lesion. Ano-rectal tuberculosis probably begins as an infection of a crypt at the junction of the skin and the mucosa. When once the infection has set in, certain factors operate to favour the spread of the inflammatory process. The first of these factors is the normal physiological activity of the rectum and anus, where the periodical contraction and dilatation, due to the passage of gas and faecal material, prevent the infected parts from resting. The second factor is the constant contact of the lesion with bacteria and faecal matter which tends to maintain the septic process and favours reinoculation and secondary infection. Once the tuberculous infection has set in, the process spreads, giving rise to induration, caseation, and necrosis, resulting in an ano-rectal abscess. The abscess thus formed continues to enlarge, and the pus burrows in the direction of least resistance. It may invade the ischio-rectal fossa, producing an ischio-rectal abscess, or it may burrow through the skin or mucosa, forming a sinus which becomes either internal or external, depending on its location, or it may form a complete fistula. The fistula may assume any of several forms, multiple, complex, horse-shoe or by any other descriptive terms, used to indicate its shape, position, etc.

Before describing the operative treatment of anal fistula, it is important to consider the anatomy of the disease and the principles on which proper operation must be based. If a line is drawn transversely through the middle of the anus, all fistulæ lying anterior to this line will be found to pass directly from the

cutaneous openings to that in the anal canal, whereas all fistulae posterior to this line have their internal openings in the posterior midline of the anal canal, no matter how many external openings there may be and no matter where these external openings



are situated. Thus, practically all complicated horse-shoe fistulae are posteriorly situated.

Operative treatment.—*Anæsthesia*.—It is better to avoid a general anæsthesia, as it is likely to worsen the associated disease in the lungs. As far as possible, Sacral, Caudal, or local anæsthesia should be preferred. In our series we used caudal anæsthesia in only very nervous patients, and in the majority of the cases operation being done successfully under local anæsthesia. For the local anæsthesia 10-15 c.c. of $\frac{1}{2}\%$ novocaine is infiltrated all round the fistula under the skin and subcutaneous tissues; 10 c.c. of 1% novocaine being used for the deeper tissues and for the sphincters. We have found this method to give a very good anæsthesia, without any ill-effects.

Operation.—When operation is decided on, it should be borne in mind that the operation should never be undertaken for the cure of fistula in the presence of acute inflammation or when there is much pus. In such cases a preliminary incision is done to permit easy drainage, and radical operation is undertaken only at a later stage.

The preparation of the patient for the operation is done as follows :—

In the morning on the day before the operation, a purgative is given, and the patient is put on light diet. In the evening, a soap-and-water enema is given, and then the bowels locked up with bismuth and opium mixture. In the following morning, another cleansing enema is given, and the perineum and surrounding parts shaved and sterilized in the usual way as for an operation.

When everything is ready, the patient is placed in the lithotomy position, the proper anæsthesia having been given, the nature of the fistula is made out by means of probe and palpation, and then the actual operation is planned, according to the type of fistula.

In case of simple complete fistula with nearly straight track, pass a grooved director completely through the fistula and then cut through the tissues and completely excise the track.

In cases of complicated horse-shoe type of fistulae, begin the operation by freely opening all the fistulous tracks, except that which penetrates the gut. After this is done, proceed to divide the track leading to the internal opening exactly as in a simple fistula. Make the incision strictly radical to the anus. Never incise the anal margin obliquely nor in more than one place, otherwise loss of control of the sphincter may result.

Whatever may be the type of fistula, in all cases after laying open the fistulous track, as described above, remove en masse all the sclerosed diseased tissues surrounding the fistula till the healthy tissue is reached. In this way, by the complete excision of all diseased tissues, extension of disease may be prevented and healing may be hastened by the formation of healthy granulation tissues from the raw healthy area.

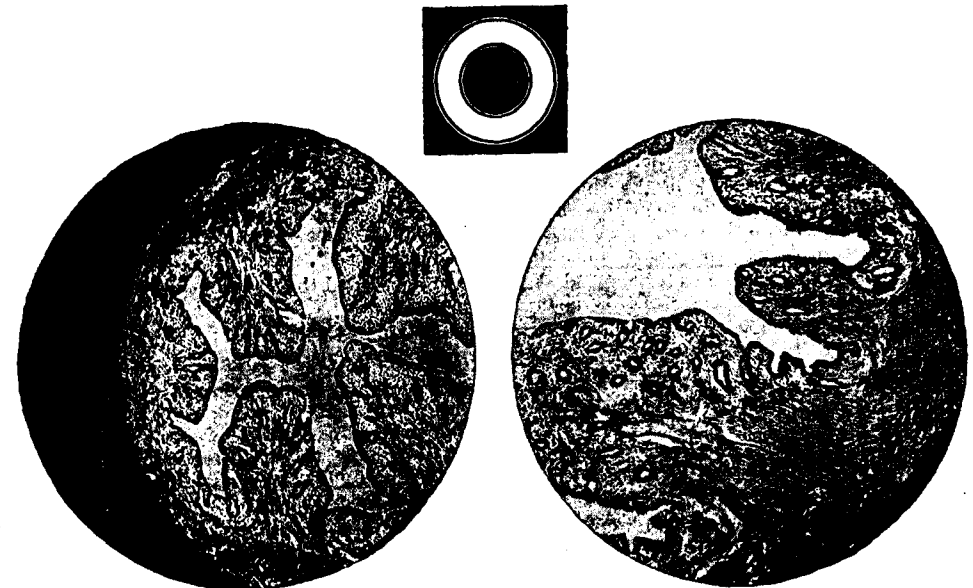
No attempt should be made to scrape the fistulous track, as by this means the complete removal of all tuberculous tissue is not possible; on the other hand, the scraping will only crush and macerate the tuberculous granulations and allow the extension of the disease by the new channels that are cut open. This may be one of the reasons why extension and recurrence of the disease is generally attributed to the method of operation with the knife. Another disadvantage of scraping is that, if all the necrosed tissues are not removed en masse by operation, nature attempts to do it by clearing it in the form of discharge. This will delay the healing process, and the subsequent granulations formed will not be so healthy as would be expected to be found

arising out of the healthy tissues, after complete excision of the diseased fistulous track. After completing the operation, attend to hæmostasis; the wound is packed fairly tightly on the first day to control oozing, with gauze soaked in 2-2½% Acriflavine in liquid paraffin, and the whole secured with a T-bandage, using moderate pressure to control hæmorrhage or oozing.

Post-operative Treatment.—If there is much pain, after the patient is taken back to bed, analgesic drugs, like morphia, aspirin etc. are given to alleviate pain. The patient is put on light liquid diet, and bowels are still held bound with bismuth and opium mixture. On the third day the bowels are opened with castor oil, and the dressings changed for the first time. The subsequent management of the patient is done with a view to help the wound to heal up from the bottom. However thoroughly the fistula may have been operated upon, the ultimate success or failure lies absolutely in the hands of the dresser. If, through carelessness, he allows the channel to roof itself over, no good will come out of all the surgeon's effort.

The best time for the later dressings is after the bowels are opened every day. In this matter we have to call for the patient's co-operation and in our experience there has been invariably no difficulty in obtaining this. If we find any discharge from the wound after the first dressing, it is better to clean with Eusol and use gauze soaked with Acriflavine in liquid paraffin. But once the discharge has stopped and the wound begins to granulate, any kind of antiseptic should never be used. It is a mistake to use antiseptic dressings at this stage, as they will either prevent the young delicate granulations from growing or completely destroy them. At this stage of granulation, clean with saline, lightly plugging the cavity with either sterile vaseline or sterile cod liver oil. A word of warning is necessary regarding plugging. The wound should never be plugged very tightly, as too much pressure will prevent the growth of granulation tissue, but a light pressure will have a beneficial and stimulating effect on the growth of granulation tissue and also will ensure that the healing of the wound takes place from the bottom, too rapid a closure of the superficial tissues being prevented. By carrying out rigidly the after-treatment as outlined, we can get a radical cure of tuberculous fistulae.

Analysis of 26 operations in 24 patients.—In the last three years the writer of this paper has done 26 operations in 24 patients. In 2 cases the operation had to be repeated.



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NOV. '38] FISTULA-IN-ANO IN T.B. PATIENTS—M.C. VERGHESE 1021

In one of the two cases where the secondary operation was necessary, the fistulous track was situated anteriorly, too close to the bulbous urethra, and hence complete excision of the track was made difficult. In the other case, the secondary operation was necessary, because the healing from the bottom was not satisfactory, due to improper after-care, as a result of the change of the trained dresser.

These two cases clearly illustrate the necessity of complete excision of the fistulous track, on the one hand, and the rigorous adherence to the after-care to help the healing from the bottom of the wound, on the other hand, in order to get a satisfactory result out of the operation.

All the cases in this series operated for fistula-in-ano, had pulmonary tuberculosis, and one case had intestinal tuberculosis in addition.

Of these 24 patients, 3 patients were in II Stage (moderately advanced) and 21 patients were in III Stage (far advanced), with regard to their pulmonary affection. Since all the cases of fistula operated in this series were secondary to pulmonary tuberculosis, the fistulae were also considered to be tubercular in origin.

Of the 24 cases, in 23 cases tubercle bacilli were isolated from sputum, and in 20 cases bacilli were found in faeces also. This may be due to the swallowing of the sputum, which is a common occurrence in patients suffering from pulmonary tuberculosis.

Out of 24 cases operated, 3 are still under treatment, and a good result is expected. Of the remaining 21, complete healing was obtained in 18; 2 cases had to leave the Sanatorium before complete healing, and one died on account of the advanced pulmonary lesion.

The average time taken for complete healing of the wound was seven weeks.

It must be admitted that the number of cases dealt with in this paper is small. But from a study of these cases it may be suggested that in tubercular patients an anal abscess or ischio-rectal abscess should be incised as soon as it is diagnosed, that drainage of the infected area must be maintained and that if a sinus or fistula persists, a radical operation should be performed as soon as local and general condition permits. If the operation is done with a good technique and if proper post-operative care is given, the wound will heal satisfactorily, even though this

healing may take a longer time than what is experienced in fistula of non-tubercular origin.

Summary.—A short review is given of methods of treatment of fistula-in-ano and some of the merits and demerits of these methods are mentioned.

The pathology of fistula-in-ano is briefly described.

The technique of the operation and the after-care as is practised in the Union Mission Tuberculosis Sanatorium, Arogyavaram, is explained with a review of operations in 24 patients.

Emphasis is laid on the complete excision of fistulous track, the avoiding of scraping of fistula, and on the conscientious carrying out of the proper after-care to help the healing from the bottom, in order that a successful result may be obtained.

Recent Advances in the Surgery of the Heart*

BY

Captain E. S. Gopalan M.S., M.B., A.I.R.O.

*Surgeon, Coimbatore, South India,
and lately Honorary Assistant Surgeon, General Hospital, Madras.*

Introduction.—My personal experience with the Surgery of the Heart is practically nil. Except in a number of instances, about a dozen in number, where cardiac resuscitation for accidental cardiac arrest during anaesthesia, was done by left parasternal compression, introcardiac injection of adrenalin, and cardiac massage by one hand inside the abdomen through a laparotomy wound and the other by counter pressure on the præcardiac region, with a very high percentage of success, I have nothing more to boast of. A few cases of sub-total thyroidectomy was done by my ex-chief (Col. Pandalai) for congestive heart failure with immediate good results. But I have been a close student of the recent trends and developments in the surgery of this wonderful organ and though the surgical attacks on this erstwhile impossible organ, have been rewarded with a greater number of failures than successes, I cannot but admire the courage with which these pioneers went about their business, with stray successes. No great thing is achieved without taking

* Specially contributed to "The Antiseptic"

risks, and what seems to be an impossibility at one stage, will become a standard procedure at a succeeding stage. I am optimistic about the future, at least, in the case of some cardiac lesions, in which I should include lesions of the pericardium, angina pectoris, obliterative coronary diseases and wounds of the heart.

Historical.—There are three epochs in evaluating the history of cardiac surgery. The first was the age of mysticism from prehistoric times, through Hippocrates, to the tune of Ambroise Pare in the sixteenth century, in which "the heart was considered a sacred organ not to be touched except at the expense of life. Injury to it was considered absolutely and necessarily fatal." The second epoch was the age of investigation from Pare to the first attempts at suture of the wound of the heart by Cappelen in 1895, Farina and Rehn in 1896. "During this period it was observed for the first time, that wounds of the heart were not necessarily fatal. The causes of death in cases of wounds of the heart were investigated. The careful and accurate observations of George Fischer (1868) proved that in animals not only did wounds of the heart heal, but that missiles were often retained in such wounds and carried for years without disability. Experimental investigation proved that wounds of the heart could heal and that valvular defects could be created and their physiological effects studied"

The third is the modern epoch from 1895 when cardiac suture was attempted for injury, to the present time. "This period comprises the brilliant epoch of modern surgery, in the annals of which, the conquests of this field stand out as the supreme test of technical surgery." Within 1906, Salomoni collected 160 cases of suture of heart for wounds with 62 recoveries. Other procedures such as section of cardiopericardial adhesions for adhesive pericarditis, open drainage for suppurative pericarditis, and even sections of cardiac valves for stenosis (1923), were attempted. In 1916 Jonnesco reported the first successful case of relief of angina pectoris by ablation of certain nerves.

The Trendelenberg operation for acute pulmonary embolism was also rewarded with rare successes. And to-day obliterative diseases of the coronary arteries, are getting prominent attention by attempts at revascularization by various methods. Though, in the nature of things, majority of cardiac diseases are bound to be treated by physicians, surgery is slowly invading this

sanctum, not as an usurper but as a helper. It is not possible for me to give an elaborate account of the surgery of the heart, within the short space available and so I have to be very brief in the treatment of the various lesions.

Anatomical Considerations.—The heart and pericardium are situated in the mid portion of the inferior mediastinum. The superior mediastinum lies above a line drawn from the 4th dorsal vertebra to the junction of the manubrium and gladiolus, and the inferior mediastinum lies below this line. That part of the inferior mediastinum anterior to the pericardium is called the anterior mediastinum, and that posterior, the posterior mediastinum. In the anterior mediastinum lie the internal mammary vessels, the triangularis sterni muscle and some fatty tissue and lymphatics. In the posterior mediastinum lie the aorta, oesophagus, nerves and lymphatics. Between these compartments is the middle mediastinum containing the heart, the pericardium, the first portions of the aorta and pulmonary artery, part of the inferior vena cava, the pulmonary veins, phrenic nerves and some bronchial lymph glands. The superior mediastinum contains the aortic arch with its main branches, the innominate veins, the vagus, phrenic and sympathetic nerves, the trachea, oesophagus and thoracic duct, the thymus and some lymph glands.

The uncovered portion of the pericardium is that part not overlapped by the pleurae. It is of great surgical importance. It should also be noted that the pleurae on the left side overlaps the pericardium to a considerable distance farther than that covered by the lung. The space is modified by intrathoracic or intra-abdominal disease, but chiefly by changes in the size and shape of the heart. The larger the heart and the more vigorous the patient, the greater is the interpleural space. In cases in which there is a collection of fluid in the pericardium, the left border of the space is chiefly affected. This interpleural space represents the "triangle of safety" and whenever possible should direct the approach to the heart and pericardium.

The pericardium is a fibroserous sac enclosing the heart and extending upwards a variable distance upon the great vessels. Normally, it contains about 25 c.c. of clear fluid which acts as a lubricant. It lies behind the sternum and the cartilages of the 3rd, 4th, 5th, 6th and 7th ribs of the left side in the middle mediastinum. Laterally, it is covered by the pleurae. It is practically non-distensible except when pressure is slowly exerted over a long period of time. The inner lining of the pericardium

is a delicate membrane lined with a single layer of flattened mesothelial cells. This serous lining is continuous with the epicardium at its junction with the great vessels. The epicardium covering the great vessels is arranged in the form of two tubes, one covering the aorta and pulmonary artery and one covering the superior and inferior vena cavae and the pulmonary vein. The U-shaped space between these tubes is called the transverse sinus. This represents a potential cul-de-sac in which infectious material may become walled off. It permits also of special surgical procedure of digital compression of the inflow of the heart, a manipulation that may be of considerable importance in the suture of a wound of the heart (Sauerbruch's method).

Blood supply.—The coronary arteries are essentially end arteries. Although there is some anastomosis between the various coronary branches and some added nourishment is available through the minute sponge-like system of the thebesian vessels which open directly from the cardiac chambers, any interference with the major coronary supply brings serious sequelae.

Innervation of the heart.—It has both an extrinsic and intrinsic system. A knowledge of the intrinsic system is of value in relation to wounds of the heart and all procedures directly attacking the heart itself. Wounds of the sino-auricular node and auriculo-ventricular bundle may be immediately fatal, as the heart may either come to immediate stand-still or be set off into "irremediable circus motion". The extrinsic nervous connexions of the heart and pericardium are comprised in the paired vagus and sympathetic nerves. These nerves send numerous branches to the pericardium, the root of the aorta and the base of the heart. Radicals from these nerves form a rich plexus of fibres both posterior and anterior to the heart and the pericardium and within this meshwork are embedded many ganglion cells. The vagal branch to the heart called the depressor nerve, has a varied position, and if it is to be found at operation, it must be identified by its action on the heart rate when stimulated.

Physiology and pathological physiology.—In valvular diseases, the damage to the heart as a pump is due to a leak, to an obstruction or to a combination of both. These are the so-called valvular insufficiencies and stenoses. "They differ from each other as a leaking piston in a pump differs from a corroded feed pipe". These valvular defects lend themselves only to indirect treatment and cannot be repaired by the physician in the mechanical sense.

The intrinsic cardiac nervous apparatus is acted upon by the central nervous system through the sympathetic and vagus neurones. Stimulation of the sympathetic results in an increase in the rate and strength of the ventricular contraction and this is spoken of as the "augmentor" or "accelerator" nerve to the heart. Stimulation of the vagus, on the other hand, produces a weakening of the heart beat and a decrease in its rate and is spoken of as the "inhibiting nerve" or the "depressor nerve" to the heart. The vagus has its origin in the medulla, receives the bulbar portion of the spinal accessory, and at the nodusal ganglion, a branch from the superior cervical ganglion. Where it gives off the superior laryngeal nerve, the depressor nerve arises as a separate filament. It is also proved experimentally that there are no sensory fibres of any kind in the cervical sympathetic trunk above the middle cervical ganglion nor are there any in the superior cervical ganglion. The cervical sympathetic trunk and the superior cervical ganglion are purely motor in function.

The role of the pericardium.—The chief functions are (1) lubrication and (2) protection. The pericardium prevents adhesions forming in extrapericardial thoracic infections. It also prevents sudden overstretching of the cardiac muscle. Because of its chief characteristic of non-distensibility, the pericardium presents a great danger. "Normally with each inspiratory effort there is practically a negative pressure in the great venous trunks entering the heart. As pressure increases in the pericardial sac, prevention of filling of the superior vena cava occurs first. If the intrapericardial pressure rises it may even reach the intra-auricular pressure. When this point is attained, the heart fails to fill and the blood pressure falls to zero. This situation may occur with the sudden accumulation of fluid either in infectious diseases or following a wound of the heart. If the fluid is slowly accumulated as may occur in the serous form of pericarditis, in scurvy, rickets, Pick's disease etc., the pericardium will adapt itself to the increased bulk by gradual dilatation, and almost no deleterious pressure phenomena result." Sudden increase of intrapericardial pressure results in the condition known as "heart tamponade". The rapidity with which the intrapericardial pressure is formed is an important factor in estimating the degree of tamponade. A full appreciation of this "heart tamponade" is necessary in the management of traumatic injuries to the heart. Delay to recognise and treat this condition, will be fatal.

Some Special Surgical Problems.—The great problem has, all along, been the problem of pneumothorax, incidental to the exposure of the heart. This has, to a large extent, been solved by the modern use of positive pressure anaesthesia. In purely cardiac and pericardiac lesions, median sternotomy, as advocated by Milton, modified by Rehn who added the transverse division of the sternum in the region of the second intercostal space, is a method which is intended not to injure the pleura. The other methods, are (1) intercostal incisions often accompanied by the division of the costal cartilages at the points of their attachments to the sternum, or, in a few instances, practically the same procedure except that one rib is resected and (2) osteoplastic flaps.

Traumatic injuries to the heart.—The fatalistic attitude with regard to the traumatic injuries to the heart, has given place to a rational attitude on the part of the modern surgeons, based on anatomy, physiology and the special role of the pericardium. It must be evident that a good proportion of the injuries, especially of a severe nature, must be attended by immediate fatality. For such cases, attended with a big rent in the auricular or ventricular walls, or injury to one of the bigger branches of the coronary artery, associated with or without injury to the neighbouring lungs and pleural cavity, precious little can be done, as the coroner will take charge of the body, instead of surgeon, the patient. It is only in cases not attended with immediate death, that a surgeon, working in a specially equipped clinic, can do much to save life and prevent future complications. It must be admitted however, in consideration of the past experience of surgeons, that it is practically impossible for individual surgeons, to come across more than a few cases in their life time. Hence, there is no question of a surgeon specializing in this department of surgery.

Nevertheless it would be a good convention to entrust such cases, if it were at all possible, in such emergencies, to a surgeon who has most experience in intrathoracic procedures. Failing this, it would be a wise precaution, to entrust such cases to a general surgeon, who has studied the theoretical aspects special to the surgery of the heart. Every surgical centre must be equipped to meet such rare surgical emergencies, with such things as a motor saw to split the sternum, powerful rib retractors etc. Even as a tracheotomy set must be ready in any casualty room, a motor saw and a rib retractor with some other small things,

must be ready in the operation theatre of a clinic, doing major surgery. And any surgical clinic must be able to get at a competent anaesthetist well versed in pressure inflation anaesthesia. Judged by these standards even the premier institution in the Madras City, the General Hospital, may be back-ward, at present, but I will not be satisfied, unless all surgical centres in the presidency, including private clinics, equip themselves with these fundamentals. It is a question of life or death that may be the issue at a particular moment and the surgeon will not be true to himself or to the traditions of his noble profession, if he allows a patient to die, simply for lack of a necessary equipment.

Injuries may be stab wounds, gun shot injuries or penetrating injuries by needles etc. A gun-shot wound is not necessarily fatal; nor in the case of lodgement of a shot in the pericardium or the cardiac wall, without symptoms, is interference necessary. Each case must be watched for urgent symptoms of tamponade or slow symptoms of pericardial effusion or suppurators. It is estimated that about 60% of the cardiac injuries are associated with injury to the neighbouring lungs. Moreover the injury may involve the pericardium alone, the heart and pericardium or the heart alone without involvement of the pericardium. Whether surgical interference is necessary or not, in a particular case, depends on the symptoms and signs. Where there is the least suspicion that there may be grave injury inside, it is a wise plan, in the presence of indubitable indications, to explore the pericardium. In the case of stab wounds with the weapon in situ, plugging the wound, it is criminal to think of attempting the removal of the weapon, until the heart is exposed by a properly executed operation. Ill-advised removals by friends (and some medical practitioners), have, in most instances, been rewarded with immediate deaths. The reason is obvious. The weapon, before removal must have plugged the rents in the cardiac wall and prevented escape of blood. This protection was removed by the stupid removal of the weapon. But there is only one exception to this general dictum. In the case of a fine needle whose tip is in the cardiac wall or the cardiac chambers, it is wise to remove the needle at the earliest opportunity as a needle in situ will damage the friable walls of the heart by the frequent contractions. After the removal of the needle, the patient should be closely and carefully watched for signs of tamponade or septic pericarditis.

It must also be an invariable practice, where explorations are done, to remove all accessible foreign bodies situated in the

pericardial cavity, in the cardiac wall or accessible neighbourhood.

Where there is a suspected injury of the left lung in combination with an intracardiac injury, the left parasternal approach is the method of choice. Where there is no evidence of injury to the left lung, median sternotomy of Milton or any suitable modification thereof, should be the standard procedure. In all cases, the aim must be adequate exposure, to contend with any condition that may be met with. There is absolutely no use of exposing the heart with a tiny incision which could not be expected to give the surgeon an efficient manipulative control of the heart, by the Sauerbruch's method or any other method such as the method of apical suture etc. That surgeon will surely come to grief who, through a small exposure, opens the pericardium, relieves the tamponade temporarily, but finds an inaccessible heart projecting columns of blood on to his very face to his confusion and to the bewilderment of his assistants. The writhing heart pumping out columns of blood on to the very face of the surgeon, who stands helpless and allows the patient to die, such a scene more befits a slaughter house than an operation theatre. Such scenes have been enacted, even in recent times, and the devil of a vigorous pump like the heart, once relieved of the protecting tamponade, will pump itself out to death, unless it is prevented from so doing by some grip such as that of Sauerbruch. It is impossible, in the course of this article to go into greater details. Those interested may well go through the original monographs and individual case reports. It is also advised by surgeons who have experience in this line, that in suturing the wounds of the heart, fine silk or chromicised catgut should be used. They also advise non-inclusion of the main branches of the coronary artery in the ligature, unless the coronary arteries themselves are injured and cause bleeding. They also warn against injuring in any way the condensed nerve pathways in the heart, such as the Sinoauricular node, or ariculo-ventricular node, Bundle of His and ventricular bands. The results of surgical intervention of the traumatic injuries to the heart and pericardium have been progressively encouraging.

The Surgical Treatment of Chronic Valvular Disease.—

Mitral stenosis being a common lesion, and regurgitant lesions due to valvular insufficiencies being impossible of cure, even on theoretical considerations, all attempts at surgical treatment have been practically confined to the treatment of mitral stenosis

by valvulotomy and valvulectomy. By cutting or removing a piece of the stenosed valve, a mitral stenosis is converted to an insufficiency, which is a more tolerable lesion than the stenosis. There is no hope of a pucca cure in any of these lesions. Life is rendered less intolerable and in a successful case, patient must be able to lead a little more active life. Out of the 11 cases recorded in the literature, one case was done for acquired aortic stenosis, one for congenital pulmonary stenosis and the remaining nine for mitral stenosis. Out of the eleven, only 3 cases survived the operation, a mortality of 73%. This is disappointing. But even one case of survival and relief after operation, is a bright star in a dark firmament, and points to great future possibilities, in reducing the mortality to a negligible extent. Pioneers, in any line, have to contend with failures, rebuffs and disappointments. The very failures must be utilized as stepping stones to success provided the causes of the failures are thoroughly appreciated.

A good deal of experimental work has been achieved in respect of this valvular lesion. Stenotic lesions have been experimentally induced in animals and their cure by valvulotomy etc., has been achieved. Knife valvulotomes were used in experimental animals. Valvulotomy and valvulectomy have been attempted by sight by the use of various forms of cardioscopes introduced through the left ventricular wall or the left auricular appendix. Surgeons who have used the cardioscopes are not much enthusiastic about their utility since the work has to be carried in an opaque medium, and to be successful, must conduct the operations, in the very vicinity of the affected valves. The consensus of opinion seems to favour a method of valvulectomy by the use of cardio-valvulotomes by the blind method. All the valvulotomes must have one thing in common, and that is, the removed segment must not be allowed to escape into the cardiac cavities. There are some differences of opinion as to the method of approach to the mitral valve. Cutler prefers the left ventricular route after proper exposure. H. S. Souttar has reached the mitral valve through the left auricular appendix. I shall quote two typical successful cases, the first by Cutler and two others and the second by Souttar.

"CUTLER, LEVINE and BECK, 1923.—Female, eleven years of age. No history of rheumatic fever. Increasing dyspnoea on exertion for three years; confined to bed with orthopnoea and haemoptysis for eight months previous to operation. Classical physical signs of mitral stenosis, diastolic and presystolic murmurs, small pulse, prominent left auricle in roentgenogram.

Operation through median thoraco-abdominal incision; ether; small tenotome thrust into the left ventricle and attempt made to cut stenosis. Wound in heart sutured with silk; pericardium closed without drainage. Evidence of immediate post-operative collection of fluid in pericardium; thereafter rapid and satisfactory convalescence. At time of writing, over four years after operation, patient ambulatory, weight increased, no haemoptysis since operation. The diastolic murmurs though changed, have not been greatly altered; there is some prolongation of the systolic murmur. The rhythm which was regular is now arrhythmic.

"SOUTTAR—1925—Female, nineteen, chorea in past. Signs of increasing failure of circulatory compensation for four years with cyanosis, severe dyspnoea and finally haemoptysis. Examination showed signs of mitral stenosis and insufficiency. The heart was enlarged and the chest somewhat prominent over the heart; there were a long rumbling diastolic murmur and a soft blowing systolic murmur, no presystolic thrill, systolic blood pressure 95. In spite of the signs of insufficiency it was felt that a further reduction of the stenosis would be of assistance. Operation through left parasternal incision, using an osteoplastic flap from the sternal edge and hinging on the second, third, and fourth ribs; intratracheal (15 m.m. Hg pressure) ether anaesthesia; on opening pleura, moderate collapse of lung; pericardium opened over left auricular appendix, appendix drawn into wound, base clamped, tip incised, fingers thrust into appendix, clamp removed, fingers explored mitral ring which readily admitted finger, revealing only moderate stenosis with little thickening of valves; valve opening further dilated by finger, which was then withdrawn, base of appendix ligated with silk. Intratracheal pressure raised to expand lung fully and wound closed in layers. Excellent recovery, but no change in physical signs."

Surgical Treatment of Coronary Cardiopathies.—These include coronary arteritis, coronary thrombosis and angina pectoris. "The terrible suffering of the victims of coronary disease, the dread of death that it engenders, the frequency with which this dread is justified by subsequent developments, and the helplessness of medical treatment to give adequate relief, should have proved sufficient incentives for the intervention of surgeons, however great the danger incurred, and however difficult the problems involved. That successful surgical treatment is of such recent development cannot, however, be attributed

of the absence of surgical initiative; the chief explanation lies in the lack, until quite modern times, of an accurate understanding of the nerves and blood supply of the heart. In fact, our present knowledge of the anatomy and physiology of cardiac innervation, and of the coronary circulation, has been largely obtained through surgical research, and from the result of active operative intervention on the part of bold and resourceful surgeons." The pathology of peripheral occlusive vascular disease may safely be applied to comprehend coronary occlusive diseases. In all these cases the element of spasm invariably precedes organic occlusive changes. The pure functional type of vaso-spasm applied to coronary circulation may give us the picture of angina pectoris, without demonstrable organic changes.

Angina Pectoris.—The object of surgical intervention is to prevent or relieve the agonizing or crippling pain incidental to this condition. Several procedures have been attempted and the rationale of these procedures is getting clarified with increasing experience. Experience has taught us that safer and simpler methods are gradually replacing the more difficult methods advised by early pioneers.

1. *Complete Cervical Sympathectomy*:—This was the operation originally performed by Jonnesco and it is admittedly difficult, dangerous and unjustifiable in the majority of cases.

2. *Suprastellate Sympathectomy*:—Coffey and Brown gave relief to some cases of angina pectoris by removal of the superior cervical ganglion. This is above the level of the sensory connexions and the relief must be due to the division of the motor or vaso-motor fibres.

3. *Stellectomy*:—At present, this operation, not very difficult, is perhaps the operation of choice. But this may also fail to give adequate relief on account of marked variations in the anatomical arrangement of the sensory nerves. Removal of the stellate ganglions can be successfully accomplished by either the anterior or posterior routes.

4. *Paravertebral alcohol injection of the upper thoracic ganglia*:—This is not the place to go into the actual technique of the injection but it is sufficient to say that the injections, which require considerable experience and accuracy, are the safest procedures known for this dreaded condition, and may eventually supplant the more radical procedures.

5. *Total thyroidectomy* has also been done to cure this condition. Thyroidectomy decreases the body metabolism and

relieves the heart. This indirect attack, not devoid of operative risk, is not likely to establish itself for this condition.

Coronary Arteritis and Thrombosis.—In addition to the procedures described in the previous paragraphs for the treatment of angina pectoris, and in keeping with the essential pathology of the coronary occlusion with the resultant infarcts and ischaemia, attempts have been successfully made, both experimentally and therapeutically of introducing fresh vascular connexions by pedicled grafts of pectoral muscles or vascular omentum from the abdominal cavity. This is known as "revascularization," and without entering into the exact technique, it can be boldly prophesied, that these procedures or modifications of them have a great future and surgeons will have to play an important part, in conjunction with the physicians, in the perfection of a standard and safe technique. So far, BECK has done seven cases with a single death attributed to the operation. The other cases evinced marked relief and improvement.

Paroxysmal Tachycardia.—LERICHE and ZONTAINE have cured a case of Paroxysmal tachycardia by stellectomy. J. C. WHITE injected novocaine, into the upper thoracic ganglia, in two cases, in one of which the heart rate was brought down from 210 to 83 for three weeks.

Thyroidectomy in Cases of Congestive Heart Failure.—In these cases the extirpation of a normal thyroid is to reduce the work of the heart by lowering the general metabolism. This procedure promises to become a standard method for cases of early congestive failure as opposed to established failures in which surgery will only precipitate the end.

Surgery in Pulmonary Embolism.—Pulmonary embolism is a catastrophe in extremely rare instances, during post-operative or post puerperal convalescence. Most of the cases end in immediate death. If the condition is recognized within 10 minutes, surgery may exceptionally save the case. Hitherto all the cases attempted in America have proved fatal. But a few successful cases, out of innumerable failures, are reported from the continent of Europe. The standard operation is that done by Trendelenberg in which the heart is rapidly approached through a left parasternal osteoplastic flap incision, the pleura wiped out of the field, pericardium is incised in the basal part and retracted by silk sutures, the combined vascular pedicles of the aorta and pulmonary artery commanded by a rubber catheter introduced through the

transverse sinus, the pulmonary artery which is situated immediately to the left of the aorta incised longitudinally, edges of the incision retracted by special clips, the embolus removed by special forceps, the commanding rubber catheter momentarily released to find out if circulation is re-established, and finally the incision in the pulmonary artery is securely closed by silk, the pericardium sutured with or without drainage, and the wound in the chest wall closed. In this operation the essentials are a correct early diagnosis and an immediate correct operation.

Surgery of the Pericardium.—In contrast to the surgery of the valvular diseases of heart, diseases of the pericardium, afford greater scope for the practice of surgery. I should say that diseases of the pericardium, once recognised in the medical wards, must be transferred to the surgical wards.

Trauma of the pericardium.—Since the nature and extent of injury to the pericardium cannot be known, in a given case, it is advisable to explore every case of cardio-pericardial injury amenable to such interference.

Foreign body in the pericardium.—Exploration and pericardiectomy is the method of choice.

Effusions in the pericardium.—Transudates unless causing tamponade, must be treated on general lines. Exudates, sterile and septic may be relieved by aspiration through the triangle of safety.

Suppurative pericarditis.—In former times there was a dread of going near the pericardium and surgeons were advised not to do more than aspiration even in clear suppurative conditions. But this unjustified conservatism has given place to the rational surgical method of pericardiostomy and drainage.

Tuberculous pericarditis.—In this condition pericardiostomy and drainage are undesirable and only repeated aspirations should be attempted.

Chronic adhesive pericarditis.—In very chronic cases the heart is gripped as in a vice, in numerous adhesions. Cardiolytic has been attempted with success. Excision of the pericardium or pericardiectomy has also been done with success. In extrapericardial adhesions, sternectomy and left anterior thoracoplasty have also been done. Remarkable successes are reported following such cardiolytic operative procedures.

Tumours of the pericardium, echinococcus disease of the pericardium etc.—These are treated on general surgical and special surgical principles.

Operation for Cardiac Aneurysm.—SAUERBRUCH has reported a case, in which he successfully excised and sutured an aneurysm of the right ventricle. He did not know the nature of the disease until he actually opened into it by what he thought "by mistake". In the case, he thought he was removing a mediastinal tumour. He has confessed that, had he known he was dealing with an aneurysm, he would not have touched the case. In this case the end justified the means, and perhaps this may pave the way for establishing a surgical treatment of cardiac aneurysms by excision.

Summary.—1. In this paper, the surgical aspect of cardiac and pericardiac diseases are reviewed.

2. Anatomical and physiological considerations are set forth briefly.

3. The mechanism of pericardial tamponade is discussed.

4. The question of proper anaesthesia in cardiac surgery is outlined.

5. It is proved that pericardial and coronary diseases have to come more and more under surgeons.

6. The surgical treatment of valvular diseases of the heart is at present disappointing.

Conclusion.—Such a growing subject as the surgery of the heart and pericardium deserves description in greater detail. If I have aroused in the readers, a greater interest in this new field of surgery, my scrappy review is justified.

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Emergencies in Ear, Nose and Throat Work*

BY

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IN this paper, I propose to deal with some of the common emergencies an Ear Nose and Throat Surgeon is called upon to attend. Correct treatment for these conditions is essential, as otherwise, they may result in serious complications.

Nose.—One of the commonest injuries you meet with in the nose is fracture of the Nasal bones and Septum. These are easily corrected by means of Walsham's Forceps or a Bearies's Tonsil Director. In the majority of cases general anaesthesia is necessary. Very little after-treatment is required except keeping the nostrils clean. External wounds if they are present should be treated by antiseptic dressings.

Abscess of the Septum and Haematoma are fairly frequent. Both these should be opened out extensively and drained. Otherwise, there is danger of blood or pus collecting again.

Epistaxis.—This again is very common. In the majority of cases the bleeding is from Kiesselbach's area. The nare should be cleaned up and the bleeding area cauterised with chromic acid or the Electric cautery. Pressure with the finger outside the nostril very often stops the bleeding, also washing the face in ice cold water. The patient should be assured that it is not a serious condition. Submucous injection of a few drops of Sodium Morrhuate in 5% solution gives a permanent cure.

Foreign Bodies in the Nose.—This is not commonly an emergency except when the parents accidentally discover one in the child's nostril. Majority of these can be removed with a forceps or scoop. In rare cases when the child is very refractory a general anaesthetic may be necessary. When the Foreign Body is situated too far back it may be necessary to push it into the Nasopharynx and then remove it through the mouth.

Maggots in the Nose.—(Myiasis). This is rare. It occurs in very dirty nostrils where flies deposit their ova. The best

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treatment is to spray oil or chloroform and water. The maggots then crawl. They should not be allowed to die inside the nostrils as they would keep up worse sepsis.

Acute Frontal Sinusitis.—This is the one case of Inflammation of the Paranasal sinus where you see the patient in the acute stage. No surgical interference is necessary. Dry fomentations and inhalations relieve the condition in most cases. If the osteum is blocked, a spray with cocaine and adrenalin should be given.

Diphtheria.—Most cases of Diphtheria come to the Ear, Nose and Throat Surgeon first and it is very important to diagnose at the earliest possible moment. Serum should be given as early as possible without waiting for the result of the smear. Occasionally, one sees Diphtheria in the nose. This is not so important as faucial Diphtheria, because the attack is always mild.

Retropharyngeal abscess.—It is only necessary to talk about the acute condition as the chronic is always the result of Tuberculosis of the Cervical Vertebrae. Retropharyngeal abscess is not common in Madras. I have myself come across only very few cases. It usually occurs in children and the symptoms are not acute. A child with difficulty in breathing should have its throat carefully examined.

Treatment.—Is simple. The abscess should be incised and properly drained. Afterwards, gargles should be used and if the child is too young the throat should be sprayed. It is not necessary to give an anaesthetic as the pain is momentary. With an anaesthetic there is danger of pus being inhaled into Lungs.

Acute Tonsillitis.—This is a fairly frequent affection and may be either parenchymatous or follicular. Both are easily diagnosed. The throat is badly inflamed, tongue furred and the temperature is high. There is usually constipation and the urine is high coloured and scanty. In follicular Tonsillitis the crypts are filled with fibrin. In some cases this may be mistaken for Diphtheria. But in Diphtheria, the attack is insidious, temperature is not slight and there is frequently albuminuria. Still, if there is the slightest doubt, serum should be given. As follicular Tonsillitis is infectious, it is better to isolate the patient. Treatment consists in confining the patient to bed and giving aspirin by mouth and hot gargles. Hot fomentations afford great relief. Intramuscular injections of colloidal silver is very effective. Sucking tablets of Euphagin relieves the pain considerably.

Peritonsillar abscess or Quinsey.—This is an abscess outside the tonsil tissue. The affection is almost always unilateral. I have only seen two cases where it was bilateral. It is a disease common in adults.

Symptoms.—Symptoms are very severe. The patient usually looks ill with high temperature. He is hardly able to open his mouth, saliva dribbles from the mouth, tongue is badly coated and there is an offensive odour about the mouth. On examination you will find a bulging area with congestion. The uvula is swollen and oedematous and pushed over to the opposite side. Glands on the affected side are enlarged and tender.

Treatment.—The abscess should be opened as early as possible. This gives almost instant relief. The throat may be painted with cocaine or pantocaine before operation. This I find has a certain amount of effect though, you find in books that it is not so. Even if there is no pus, bleeding relieves the tension and consequently, the acute stabbing pain also is relieved. Point of incision is near the upper pole of the tonsil. It may often be necessary to open out the abscess on one or two succeeding days. Rest and treatment consists in antiseptic gargles. Collosol silver injections are also very useful. The patient should be advised to have his tonsils removed soon after the inflammation subsides; otherwise, there is danger of recurrence and septic absorption. Some surgeons advocate the removal of the tonsils when the abscess is opened. This is not an easy procedure and is accompanied by severe haemorrhage which may be uncontrollable—waiting for a few days for the inflammation to subside does not do much harm.

Foreign bodies in the Pharynx.—This again is very common. They are most often fish bones which are transparent and lodge in the crypts of the tonsil. Palpation should be avoided as it pushes the foreign body further in. Careful examination will reveal the foreign body which can be easily removed with a forceps. Power of localisation is very limited in the pharynx and patients will point to a place away from where the foreign body actually is. The feeling of its presence also remains for a considerable time after removal.

Foreign Bodies in the Larynx and Trachea.—These somehow are not very common. I have yet to see a Foreign Body in the Larynx giving rise to obstruction to breathing. If such a case is seen, immediate Tracheotomy should be done and the

Foreign Body removed afterwards. Foreign Bodies in the Trachea and Bronchi are not so urgent and the majority of them can be removed through the Endoscope.

Ear.—Furunculosis or general inflammation of the External auditory canal is very common. It is very often due to sea bathing or scratching the ear in debilitated persons. It is extremely painful and the patients come to you hoping for immediate relief. The organism causing it is the staphylococcus. It is very important to diagnose the condition correctly as very often it is mistaken for a mastoiditis. The following points should be borne in mind:

1. In mastoiditis, there is very often a history of Middle Ear Disease or one of the exanthemata.
2. In mastoiditis, the pain is more behind the Ear on the Mastoid Bone. In external otitis, the pain is much more marked in front; the patient can hardly bear the touch, the external auditory meatus being almost completely blocked.
3. Hearing is much more diminished in mastoiditis than in external otitis.
4. Discharge in Furunculosis is thick and scanty while in mastoiditis, it is profuse and purulent.
5. Careful otoscopic examination will reveal the Tympanic membrane intact in external otitis.
6. A skiagram will always aid the diagnosis.

But if in spite of all this, the diagnosis is still doubtful, it should be treated as the more serious condition *i.e.*, Mastoiditis.

Treatment.—Is very simple. Drops of Icthyol in glycerine 10% and dry fomentations give great relief. Drops of glycerine carbolic are not so satisfactory. I have seen several cases especially females, where the inflammation became worse with these drops giving rise to a crop of superficial boils. If the inflammation recurs it is advisable to give a course of staphylo-coccal vaccine like Stephar.

Foreign Bodies in the Ear.—These are fairly common and compose mostly of inanimate objects. When they are small and not impacted, they can easily be removed by syringing. When the foreign body is swelled up and impacted by moisture, a firmly impacted syringing may not bring it out. It is then necessary to use a scoop or blunt hook to remove it. This will usually need a general anaesthetic as it commonly occurs in children and when the specialist is called in, the ear will have been handled

inexpertly making the patient nervous. In rare cases where the Foreign Body is very badly impacted, it may be necessary to make an incision behind the ear, separate the cartilaginous meatus from the mastoid, cut through the cartilage and then remove it. Animate objects, when present in the ear, are very painful and should be killed with chloroform and then removed.

Rupture of the Tympanic Membrane.—This is not a rare occurrence. This is usually accidental, *e.g.*, slipping of a hair pin while scratching the ear. It may be due to a blow on the ear. It may also be caused by inflation of the ear, unskilful attempts at removal of Foreign Bodies and explosions. At the moment of rupture there will be severe pain with loud Tinnitus and sometimes painless, vertigo and nausea. When the shock has passed the patient is left with a certain amount of deafness. No active treatment should be carried out. All that is necessary is to put in some boric powder and close the ear with cotton wool. Eventually the rupture will heal with perfect hearing. If there is deafness without rupture of the tympanic membrane, it means that the labyrinth has been affected and the deafness may be permanent. It is really a concussion of the labyrinth. Several cases, however, are on record where the ear regained normal hearing after a long time with appropriate treatment for nerve deafness.

Acute Middle Ear before Perforation takes place is a very common emergency. On examination, you will find the tympanic membrane bulging and very hyperaemic. The first suggestion that occurs to you is to do a Paracentesis Tympani. But in these cases we have a sheet anchor in Otalgan. This is a drug which hardly ever fails. Instillation of these drops almost instantaneously relieves the pain and in course of time the middle ear returns to normal. You must also at the same time treat the cause *viz.*, catarrh in the nose or throat. No fomentations should be used while treating with Otalgan. If a paracentesis is decided upon, a general anaesthetic is invariably necessary and the incision should be covered in the posterior half of the membrane or at right angles to the cone of light (normal). This keeps the opening patent for some time. The best drops to use after incision is glycerine carbolic 5—10%. Hot fomentations relieve the pain.

I have fairly extensively dealt with the usual emergencies met with, in Ear, Nose and Throat work and shall be glad to know your experiences and suggestions and additional information.



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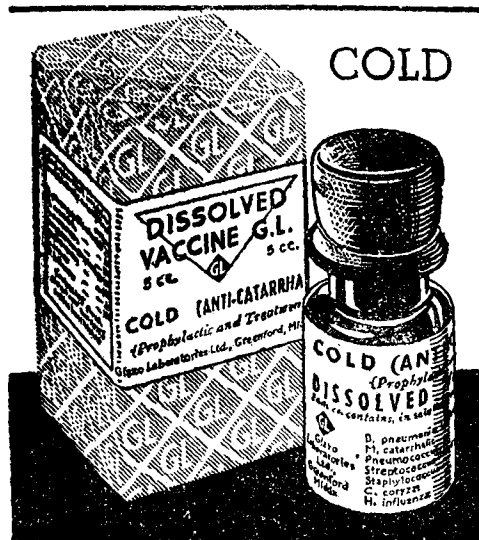
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Discussion

(After the paper was read on 17—9—38.)

Dr. V. R. Kamath:—Referred to hæmorrhages from the pharynx and middle ear, and spasmodic affections of the œsophagus and larynx, with illustrative cases. He had been called in consultation to see a child, who was in the third week of typhoid and had been bleeding from the left ear since that morning. On examination, there was a large anterior perforation of the drum through which arterial blood was constantly welling up. Haemostatics had been administered, the external meatus had been repeatedly packed with adrenalin and cobra venom but to no avail, and the child had lost several ounces of blood. Dr. Kamath considered that this case was an instance of a congenital dehiscence of the anterior bony wall of the middle-ear; a bacterial infection from the pharynx, invading the middle ear, resulting in hæmorrhage from the Rektorzik's plexus of arterioles and veins around the Internal Carotid artery. He advised an immediate radical mastoid operation, with a view to plugging the middle ear through the mastoid opening, as the only means of saving life in spite of the child's poor condition, but operation was refused by the child's parents. A few hours later, the child developed extensive blebs on the skin of the lower abdomen and buttocks, and the serosanguineous fluid from these blebs yielded the streptococcus hæmolyticus in pure culture. The hæmorrhage continued, and the patient died that night. He suggested that many of the true pharyngeal hæmorrhages arose from a leash of vessels in the lingual tonsil, on the posterior surface of the vertical part of the tongue, and could be treated by touching the bleeding spot with 20% Silver nitrate solution. He gave the brief histories of two cases of laryngismus stridulus in young children in whom a rapid cure was effected by repeated small doses of Bellergal; and a case of functional aphonia in a medical student, in whom the voice was completely restored in a few hours with three tablets of Bellergal. He considered such spasms and pareses of the vocal cords as due to an amphotonia (excitation of both the sympathetic and parasympathetic) rather than to pure vagotonia or sympathicotonia, and therefore suggested that a combination of drugs like Bellergal would be more useful than bromides or belladonna which can exert a sedative action on a single component of the autonomic—central nervous system. He thought that surgical interference was rarely, if ever, indicated in these laryngeal conditions. Allied to spasmodic affections of the vocal cords was a functional or reflex spasm of the upper end of the œsophagus. He reported a case of a young man of 28 who had come to him with a history of painless progressive dysphagia for three weeks, and pain in the

back. A general examination revealed a tuberculous lesion of the 10th and 11th dorsal vertebrae, and he referred the case to a General Surgeon. The dysphagia was treated symptomatically with Bellergal, and within 48 hours the patient could swallow liquids easily, although when Dr. Kamath first saw him, he had been reduced to sipping water with a teaspoon. The patient did not undergo treatment for the tuberculous lesion, but until his death a few months later, he was taking Bellergal and could swallow solids without much difficulty. This was undoubtedly a case of reflex oesophageal spasm. Dr. Kamath asked the speaker whether, in his experience, abscess in the inferior pole of the tonsil, papilloma of the vocal cords, and suppuration in the parapharyngeal space were frequent. He also wished to know the speaker's opinion as regards the optimum waiting period after a quinsy, before removal of the tonsils.

Dr. M. Sanjiva Rao :—Said he would like to emphasize the importance of palpating the tonsil region before diagnosing a quinsy. He had had a case of sarcoma of the tonsil in which palpation had prevented the mistake of incising the swelling. He suggested an examination of the urine for sugar in every case of quinsy which did not show marked improvement of the local condition within 24 hours of incision. For cases of simple acute catarrhal pharyngitis, he found that painting the pharynx with 25% solution of argyrol gave gratifying results. He related the histories of three emergency tracheotomies which he had done, and suggested that in such cases a long incision from the 'pomum adami' to the manubrium enabled one to reach the trachea in the shortest possible time. There was no need for any anaesthesia in asphyxiated cases, and no fear of excessive bleeding. One of the cases, a carcinoma of the larynx, was converted from a deliberate tracheotomy to an emergency because of hyper-extension of the neck which resulted in sudden cessation of respiration. He pleaded for early tracheotomy in diphtheria as he was of opinion that it prevented vocal cord, cardiac and diaphragmatic paralysis later on. He agreed with Dr. Kamath that bleeding from a varix in the lingual tonsil was quite common; in such cases he cauterised the bleeding spot with the electric cautery.

Dr. G. P. Rayen :—Asked the speaker whether agranulocytic angina was met with in Madras. He described the ulcero-membranous lesions in the pharynx which brought the patient to the laryngologist in the first instance, and said that pentosenucleotide therapy, which stimulates the leucoblastic activity of the bone-marrow, has brought down the mortality in recent years. He advocated the use of aluminium acetate packing for external otitis.

Dr. C. V. C. Rao :—Observed that painting the pharynx with a strong solution of Silver nitrate was as effective as with any other silver preparation.

Dr. N. Srinivasan :—Said he had found great benefit from Otalgan in his own case, when he suffered from ear-ache. He prescribed a mixture consisting of Pot. Chloras, Tr. Ferriperchlor. Spts menth pep, Glycerine and Aqua in cases of acute pharyngitis.

Dr. E. V. Srinivasan was of opinion that in eye conditions silver nitrate was superior to argyrol, and suggested that the same may be true in throat work. In reply to Dr. Kamath, he said that he had used Coagulen-Ciba (a hæmostatic extract of blood-platelets) in a case of hæmorrhage in the anterior chamber of the eye, with excellent result.

Dr. P. V. Cheriai, in reply, said that he agreed with Dr. Kamath as to the origin of most pharyngeal hæmorrhages from the lingual tonsil. He had seen only one case of Inferior tonsillar abscess which he opened through the lower part of the tonsillar fossa, but he had met with quite a few parapharyngeal abscesses; one of these was an extension from a quinsy, forming a large swelling in the upper part of the neck, which he opened from outside, with good result. He generally waited at least two weeks after a quinsy, before removing the tonsils, but the local examination of the throat for subsidence of acute inflammation was the real criterion. He had seen one case of papilloma of the vocal cords causing sudden dyspnoea. He concurred with Dr. Kamath in that surgical interference was not necessary in laryngismus stridulus.

Replying to Dr. Sanjiva Rao, he agreed that sarcoma may be mistaken for quinsy unless palpation was done. He considered that tracheotomy should rarely be performed in diphtheria unless absolutely necessary; a long incision was very seldom required for tracheotomy, and there were surgeons who even employed a transverse incision. He believed that removal of the tonsils after diphtheria was effective in reducing the number of paralytic sequelæ, rather than performing an early tracheotomy.

Replying to Dr. Rayen, he thought that aluminium acetate solution was liable to produce maceration of the skin of the external meatus. A case of agranulocytosis had recently been referred to him by a physician for throat examination, but there were no buccal or pharyngeal lesions in that patient. He agreed with Dr. N. Srinivasan as regards the efficacy of the mixture he had referred to, and he would wish it to be used as a stock mixture in hospitals.

Conservatism in Rhino-Laryngology*

BY

Dr. G. P. Royan, M.B., D.L.O.,

F. N. T. Surgeon, 75, Poonamalle High Road, Madras.

THE term *conservatism* as used in medical parlance, signifies the adoption of mild therapeutic measures and preserving as far as possible, the *status quo* without having recourse to drastic methods which tend to disturb the anatomy of the region. It is to be taken only as a comparative term, since what is considered as conservative treatment in one case may well be too radical in another.

It is not the purpose of this paper to advocate conservatism at all times and to all cases. The undisputed aim of medical science being the relief of human ills and sufferings with the best means at our disposal, the procedure varies with individual cases. Hence, if a certain condition demands radical procedure for its cure, there should be no hesitation to extend its benefit to the patient. But the remedy should never exceed the requirements of the malady. If there is any reasonable doubt as to the usefulness of a drastic measure, far better it is to serve the cause of humanity by pursuing the policy of "Wait and Watch." In such a case is it not fairer and wiser to spare the patient the additional agony and suffering of an operation?

In order to understand the present position of Rhino-Laryngologists, it may be desirable to go back to the pre-War days when operations on the nose and throat were much commoner than they are to-day. But with the dawn of the golden era of medical progress and in the light of the experience of the past, nose and throat surgeons have come to realise the uselessness of many of the operative procedures. The pendulum has now swung towards conservatism and the end results are much better than what we once hoped to achieve by radical procedures. In this paper, I wish to enumerate a few of the conditions in which there has been a definite reversion to conservative methods from the old time radical measures. To restrict the field of our discussion tonight, I have deliberately left otology out of consideration.

* A paper read at the meeting of the Association of Laryngology and Otology, Madras on 22-10-1938, and specially sent to "The Antiseptic" for publication.

Nose and Accessory Sinuses:—Furunculosis of the Nose.—As elsewhere on the face, the knife is scrupulously avoided in abscesses on the nose. Even squeezing the boil is condemned. The chief danger is the spread of infection to the meninges through the venous channels. Positive relief is obtained by conservative measures alone.

Hypertrophic Rhinitis.—Removal of the entire inferior turbinate has been practised widely in the past. Though at the present day, on account of our more definite knowledge regarding the function of the ciliated epithelium, complete turbinectomy is not in favour, still, it is not an uncommon practice, especially in Europe. Wholesale removal of inferior turbinate interferes with the filtering functions of the nose and leads to atrophic rhinitis. Quite good results are obtained by partial removal of the anterior and posterior ends or the thickened lower border of the inferior turbinal. It cannot be too strongly emphasised that even these procedures are resorted to only after exhausting other remedial measures like spraying with an oily base, alkaline douche, auto-massage and the local use of caustics either chemical or galvano-cautery.

Atrophic Rhinitis.—This condition is rightly spoken of as the opprobrium of rhinology. The affection is very refractory to treatment. Recently such surgical measures as would reduce the calibre of the nasal chambers have been put forward. Extensive operations displacing the lateral wall of the nasal cavity inwards are of doubtful value. If simple cleansing methods to remove the crusts and packing with tampons are not effective, little benefit can be expected from surgical procedures.

Deformities of the Septum.—Spurs and deviations of the septum are so common that a perfectly straight septum is a rarity. But not all deviated septums require an operation unless there is a definite indication. The chief symptom is mechanical obstruction, obstruction to breathing, obstruction to free drainage from sinuses or obstruction to passing of instruments to treat conditions in the nose, or nasopharynx. I do not deprecate the salutary effects of a submucous resection when I say that the operation should not be done simply because a septal deviation exists. The septum is very often given a bad name and hanged without a trial, just as an experiment to find out if any good would come out of resection. In no other condition perhaps is this good operation more abused than in allergic states.

Such indiscreet procedures, not only give no relief to the patients but even go to wreck the reputation of the operation itself.

Allergic conditions and the Nose.—Clinical as well as laboratory experience has established a definite relationship between nose and attacks of asthma. This fact was over-emphasised in the past and from cautery almost all the known nasal operations have been practised on the patients. Polypi removal, turbinectomy, submucous resection etc., have found popular favour. But can we conscientiously say that we achieved the end we all desired. Many experts of the present day are emphatic that operations on the nose for allergic states are not only useless but aggravate the condition. Some even consider the hyperplastic changes found in the nose as due to allergic process and not as the cause of asthma. If this is so, then septal deviations, spurs and turbinal hypertrophies are severely left alone unless their removal is required for other reasons. I desire to cite a case of Vasomotor Rhinitis I recently came across, to illustrate how some of these nasal operations are unnecessarily inflicted on the patient. The patient's nose had been cauterised and a submucous resection had been performed without any benefit. Suspecting clinically an infection of the right antrum, confirmation was obtained by a skiagram. The antrum was washed out twice, with complete relief of the symptoms ever since. It is more and more recognised, now that treatment of suppuration in the maxillary sinus offers a good prospect of curing asthmatic attacks.

Acute Sinusitis.—It is gratifying to see that the consensus of opinion in acute sinusitis is in favour of conservative treatment. The main purpose in the treatment of a case of acute sinusitis is to facilitate drainage and to relieve pain. This can be easily achieved by simple measures. Complete rest, fomentations or hot air bath, inhalations, anodynes and gargles alone are said to be sufficient for over 90% of cases. To this can be added the very recent valuable remedy Prontosil or any other sulphanilamide preparations. Very few indeed are the cases which require a washing out of the antrum. Beyond these, nothing need be done. Removal of the middle turbinate and submucous resection and even operation on the frontal sinus which were once in vogue are now considered to be deadly as they lead to dangerous complications. In spite of all these measures, should complications arise, they must be treated suitably and on scruple need stand in our way of adopting radical surgery.

as a life saving measure. A certain amount of risk is inevitable in life and death cases. But it must be said that since the adoption of conservative methods in treating acute sinusitis, complications are rare and they are the outcome of misplaced zeal and energy in treating patients.

Problem of the Tonsils and adenoids.—Even today we are lacking in a precise knowledge of the function of tonsils and adenoids. The long list of attributes to these organs is but a mute testimony of our ignorance. Yet this has not deterred us in condemning the tonsils on the slightest provocation. A few years ago even the lay public has been under the impression that it was the latest fashion to walk about without the tonsils. But lately there has been a change in the outlook for the better. The sheer size of the tonsils is not by itself an indication for their removal. The tonsils have been blamed unnecessarily for almost every disease known or unknown to medicine. But no self-respecting surgeon to-day would remove the tonsils for each and every one of these conditions, until he has satisfied himself after a thorough investigation that the tonsils and tonsils alone are responsible for the disease. Very often, ailments attributed to a septic focus, may be due to infection of teeth, nasal sinuses, ears, genito-urinary tract or intestinal disorders. Some surgeons deprecate the routine practice of adenoidectomy along with tonsillectomy. If the tonsils alone are to be executed, is it necessary always to mete out the same punishment to their neighbour?

In treatment after tonsillectomy too, there has been a decisive change. Gargles and throat painting are now considered useless and unnecessary, and the wounds heal much quicker when they are left severely to nature.

Peritonsillar Abscess.—Recent discussions about the removal of the tonsils for peritonsillar abscess are familiar to all of us. The attitude of the English surgeons to wait for four to six weeks after an acute attack, for subsequent enucleation, is to be commended.

Elongated Uvula.—It is only too often that we come across patients with a definite mandate to remove their uvula. But we have to first convince ourselves that no other remedial measures are of any avail before we resort to uvulotomy, which, as Sir St. Clair Thomson very pertinently calls, is now one of the rarest operations in laryngology.

Chronic Pharyngitis.—It is not an unusual experience for us to come across patients with a specific request to have their

throats burnt for chronic pharyngitis. In the past, we have been taking to cauterization as the first resort, with the inevitable result of a worse condition, dry pharyngitis. We are now more chary in using the cautery which is taken up only after exhausting all other resources.

Singer's Nodules — As in many other conditions of the larynx, vocal rest alone goes a long way in effecting cure in Singer's nodules, and subsequently re-education of the voice is undertaken. Removal of the growths is seldom practised now-a-days. Under an operation, though there may be an immediate relief, yet, later the voice becomes worse.

I have mentioned a few of the outstanding conditions in which conservatism is the order of the day. Our aim now is to adopt conservatism wherever possible and resort to radical surgery only at the strain of absolute necessity. Our trump card is conservatism and we must play it whenever we are in doubt.

Discussion

(After the paper was read on 22-10-'38.)

Dr. V. R. Kamath observed that the 'adenoids' had been thrown into the bad company of septic tonsils for no fault of their own. Since the adenoids possess no capsule, no crypts and very little connective tissue, are covered by ciliated epithelium, and contain mucous glands and goblet-cells in the clefts between the lobules, they rarely constitute a septic focus. The following is a summary of his arguments for conservation of the adenoids.

1. The hypertrophy of the lymphoid tissue in the nasopharynx is compensatory to infection in the tonsils or nose. On eradication of the primary infection, the adenoids regress spontaneously.
2. The obstruction to breathing generally attributed to adenoids is really due to swelling of the soft structures in the nasal cavities, which in turn is the result of sepsis in the tonsils or paranasal sinuses.
3. After the tonsillar or nasal septic focus has been eradicated, the nasopharyngeal lymphoid tissue is needed to deal with residual catarrh and the various casual infections to which the child has not been immunized.
4. The comparison of a series of cases whose tonsils and adenoids have been removed, with a series in which the septic tonsils alone were removed, shows that the latter cases are less prone to subsequent acute infections than are the adenoidectomized cases.



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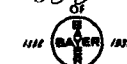
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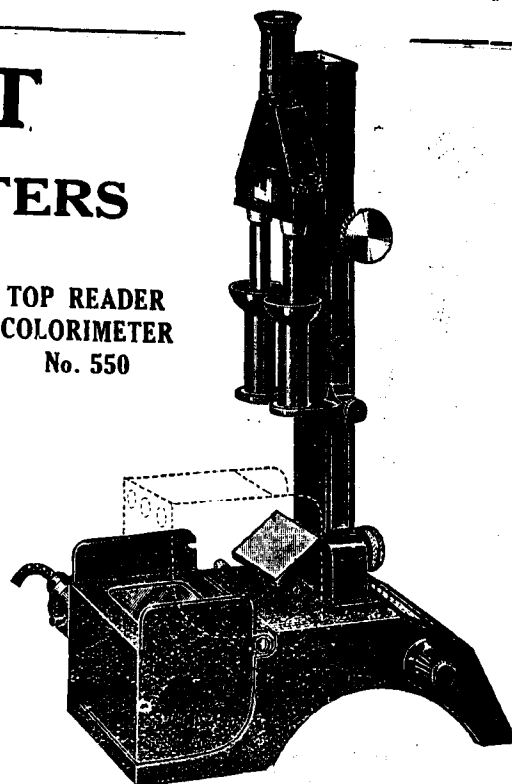
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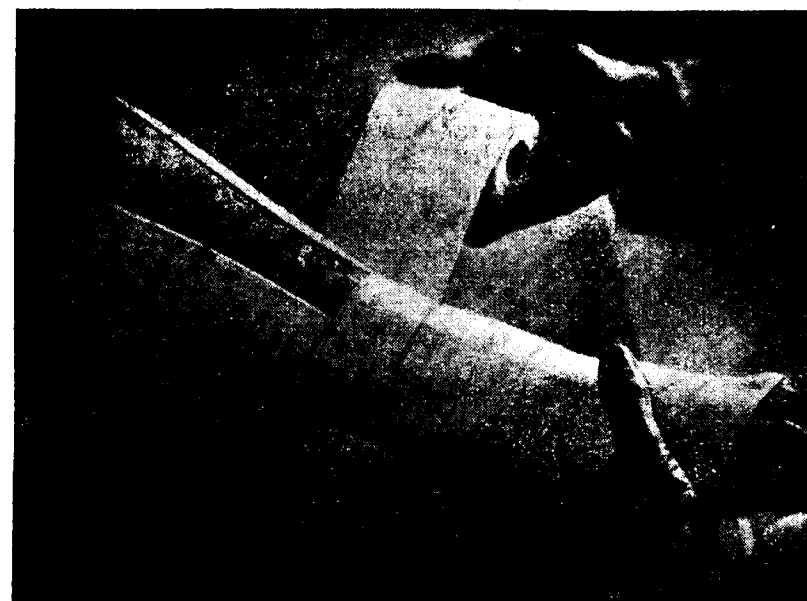
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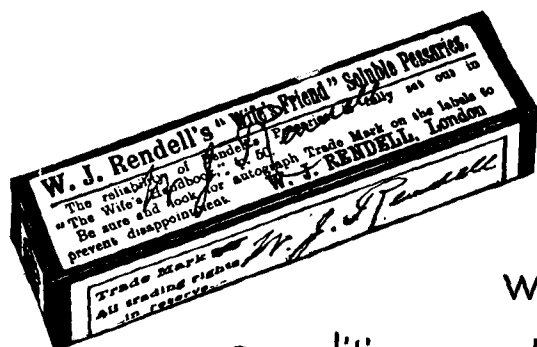
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5. Even if it is found necessary to remove the adenoids at a second operation, it can be done without any risk. He referred to his own series of about 400 cases in which the adenoids were conserved, and the results were encouraging.

6. Medical treatment of paranasal sinusitis in children (instillations of bland Ephedrinized oil into the nose, and administration of Vitamins A and D) is extraordinarily successful in curing the so-called 'adenoid syndrome' if the tonsils are healthy.

He agreed that in cases where there was long-standing or gross hypertrophy of the adenoids, or when they were strongly suspected of producing reflex symptoms, they should be sacrificed. He cited a case in which certain difficulties in the production of the singing voice disappeared after removal of the adenoids. He quoted, in support of his plea, the writings of eminent English, French and American laryngologists.

Dr. C. V. C. Rao thought that there was absolutely no harm in removing adenoids, in cases of Septic Tonsils and in cases where the hypertrophy was such as to obstruct the nasopharynx. He deprecated the idea of waiting to see if they shrank up and putting the patient to a second operation, meanwhile allowing them to do the mischief. He advocated in every case of Tonsillectomy, examination of the adenoids, with fingers and where they were such as to obstruct free breathing and block the nasopharynx, removed them unhesitatingly and in fact, he found the need to do Adenoidectomy in 98% of children with Hypertrophied Tonsils, while the need for the same was rare in adults.

Dr. Royen (in reply) said that his plea was merely, that they should not be removed as a routine in every case with the Tonsils, without discrimination.

Dr. P. V. Cherian, (President) said that, although he removed the adenoids in almost every case of Tonsillectomy, as a routine, he was still of the opinion that, only in cases where they were obstructive, they needed to be removed. He had come across adenoid masses, where cheesy material, as in septic Tonsils was found.

CASES AND COMMENTS

A Case of Appendicular Kink

BY

Captain P. S. Gupta, M.B., B.S.,

Nasik.

THE following case is very instructive to the physician as well as to the surgeon :—

I was called at 5 A. M. on 24th August 1938, to see a male patient (Age 57) suffering from acute abdominal pain. He began to feel mild pain at 6 P. M. on 23rd August in the right iliac region. It did not disturb him much till 10 P. M., when he took three teaspoonfuls of fruit-salt as it interfered with his sleep. Bowels did not move as he expected till 2 A. M., when he again took three teaspoonfuls of fruit-salt. His bowels usually acted with mild laxatives, but this time saline purgative had no effect. On the other hand, he became more restless and had a big vomit. When I saw him at 5 A. M., he complained of continuous pain in the epigastric region. There was no distension. Both the iliac regions and the hypogastric part were soft, but the recti muscles were tense over the epigastric region. There was no nausea, but, the patient had three watery vomits. Four or five small pebble-like scybalous masses came out without a flatus after one and a half pint of soap water enema. Urine was high-coloured but, otherwise normal. One c.c. pituitary had no effect on the bowels. Pulse 56 p. m., regular with good volume and tension. Temperature 96.4°.

At 9 A. M. the condition continued to be the same. Another enema was tried with no result. A surgeon was called in and an injection of Octinum and twenty drops by mouth were advised which gave him a little relief.

25-8-'38 :—Pain, a little less. No distension ; No nausea ; General condition : good ; Pulse : 80 ; Tem. : 98.4°. Soap water enema with turpentine and prostigmin injection had no effect ; $\frac{1}{2}$ oz. of Agarol at 10 P. M.

26-8-'38 :—Severity of pain as on 24-8-'38 ; Enema at 8 A. M. with no effect ; Right iliac region soft ; Fingers could not be pushed in the epigastric region, where continuous gnawing pain was all the time present ; Tem. : 99° rose to 100° for one hour or

so—came to 98 degrees again in the evening ; Pulse 108 p. m. : with good volume and tension ; The rate came down to 100 in the evening ; Enema -at 7 P. M. brought out a few faecal masses and a little flatus ; No distension, no nausea ; Tongue a bit dry and slightly furred ; severity of pain—the same ; general condition of the patient good.

Blood was sent for leucocytic count with the following result :—

Total white blood cells	...	9380 per c. mm.
A very mild degree of leucocytosis.		
Neutrophile leucocytes	...	84 %
Hyaline Mononuclear	...	5 %
Lymphocytes	...	11 %
Abnormal cells	...	Nil.

Another Surgeon was called at 10 p. m., who made a rectal examination and found it empty. He noticed slight tenderness in the right side high up. Operation was fixed up for the next morning. Morphia and Atropine were given which brought on sleep for four hours. After the effect of morphia had passed off, the severity of pain increased.

27-8-'38 :—A soap water enema was given just before the operation without any effect. On opening the abdomen the distal half an inch of the appendix was found kinked and red. A little serous fluid came out from the appendix region. It was normal otherwise. Meso-appendix was oedematous, thickened and friable. Appendicectomy was performed and the abdomen was closed.

28-8-'38 :—In the morning patient's general condition was good but he still complained of the same acute pain. The following enema was given :—

Glycerine	...	1 oz.
Olive Oil	...	$\frac{1}{2}$ oz.
Aqua	...	$\frac{1}{2}$ pint.

It had a very good effect and brought out big scybalous masses which filled the whole bed-pan (10 A. M. 28th). After this motion pain gradually subsided and the patient made an uneventful recovery.

- (1) Six enemata, 1 c.c. Pitutary, one prostigmin injection, six teaspoonfuls of fruit salt and $\frac{1}{2}$ oz. of Agarol failed to move the bowels.
- (2) After removal of the kinked appendix which had caused paralysis of the big colon, the bowels moved freely and the patient was relieved of the pain.

The following points should be borne in mind :—

No distension—No signs of collapse—Pain definitely started from the right iliac region and centered in the epigastric region. It was never colicky but continuous and severe. Would the bowels have moved without appendicectomy? The last enema was given just one hour before the operation with no faecal matter and without a flatus.

Absence of distension with no signs of collapse and without continuous vomiting excluded intestinal obstruction. Absence of acute tenderness and tenseness in the right iliac fossa together with a very mild degree of leucocytosis and not very high pulse or temperature made the diagnosis of Acute Appendicitis doubtful. It was a case of severe constipation caused by paralysis of the large bowel due to kinking of the appendix. That the bowels should have contained such a big quantity of faecal matter for nearly 5 days without producing any signs of toxæmia is worth noticing.

A Case of Preponderantly Proliferative Type of Tuberculosis of Lungs

Seen in Hyperesnsitive State, Desensitized by Sanatorium Regime

BY

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

I was sent for, in April 1938, to treat a case in Sulkia diagnosed as tuberculosis of lungs by his previous medical adviser on the basis of definite X-ray findings (Plate No. LIX). He was at that time in highly febrile condition. On examination, no trace of physical signs was found. Being pyretic at the time (fever ranging between 104° to 105°), my first consideration was to bring him out of the dangerous hypersensitive condition he was in, (making absolutely correct diagnosis was then of secondary consideration, it being taken for granted as a tuberculosis case). This condition was due, I learnt, to injudicious injection of calcium chloride intravenously, presuming it to be the stage of tuberculosis case, diagnosed as such. So I ordered typhoid rest, the X-ray film though available for clearing the diagnosis was not examined by me at that time for fear of being put on the wrong track by the

A Case of Preponderantly Proliferative Type of Tuberculosis of Lungs

By Rai Dr. G. C. Chatterjee Bahadur.



S. 120—Plate No. LIX.

X-ray film taken at the instance of his previous medical adviser before the present treatment was begun and while he was febrile. A dense fibrosed patch in the right apex is seen. This hides the right clavicle completely from one's view. In the original negative a cavity surrounded by fibrosed patch extending from 1st to 5th space is seen, but this has not been reproduced in the plate made from the negative.

[To Face Page 1052.]

possibility of my making wrong interpretation of the findings of X-ray, as there is no known criterion for making out the film of an active lesion from that of a healed one. The temperature came down to normal after a week's rest, but rose to 105° again after some unavoidable movement, showing the dangerous hypersensitive condition he was in. After two week's more rest temperature came down to normal and it has remained so up till now. Then graduated exercise was attempted cautiously and then a course of tuberculin which was begun first when he was kept confined to bed. This did not only produce no fever, but on the contrary unexpectedly started improving his weight rapidly (see case report). I was encouraged to advise him to move more, my judgement was influenced to a great extent by the absence of physical sign, till he started coming to my clinic to take the course of tuberculin injection begun already when he was lying down in his house. No febrile reaction followed this procedure. After he had gained 16 lbs. in weight from 95 to 111 lbs, (since then it has gone up to as much as 126 lbs), I looked at the film which showed a big cavity with thick fibrosed wall in the right apex, and this astonished me a great deal and increased my interest in the case.

The following history was elicited from him. Two members of his family died previously of tuberculosis. In the beginning of January 1938, he got some cough and slow fever not going above 100° . He consulted a doctor who, suspecting tuberculosis on account of his family history, put in intravenous calcium chloride, believed to be a specific for tuberculosis by a large number of practitioners which increased his fever to 102° . An X-ray film was taken on his advice. The film showing marked lesion, encouraged the doctor more in the line of treatment which he had adopted on mere suspicion before, the increase of fever being attributed by him to reaction. As there was no physical sign, the physician took great credit for himself in being instrumental in diagnosing the case properly and in adopting (as he thought) the right line of treatment. As the patient found his condition getting worse, he becoming almost bed-ridden, he did not go any more to that doctor for treatment by him. The latter, however, sent round his assistant to the patient's house saying that he had got in his armoury more efficient remedies than calcium chloride in the shape of gold and A.P., but the patient did not budge. At that time he came under my care with the above result.

Discussion.—Leaving aside the consideration of the favourable turn which the case of so desperate a nature has taken, as

can be judged by X-ray film and clinical symptoms at the time of first seeing the patient, the great interest veers round the point, why there was no hæmoptysis at any time during the whole course of the disease, no physical sign and very little of cough and expectoration, not to speak of tubercle bacilli in the sputum, in a case which is shown by X-ray to have reached the cavity stage and that at a time when there was so much febrile reaction.

If a tentative theory be put forward first to explain it, and then discuss the pros and cons based on facts for its support or otherwise, it will be better than discussing all possible contingencies based on mere conjecture. The absence of any physical sign was due to the fact that the case must have been originally one of proliferative type running a chronic afebrile course, which produced a cavity with thick fibrosed wall long ago (when it was formed no one knows) without any exudation and the cavity being surrounded by a healthy lung tissue probably in emphysematous state as generally happens in such type of cases. Recently for some reason or other, slight amount of toxæmia set in, producing slight fever and cough, which would have passed away, if no intervention had taken place. The febrile reaction might have brought in an exudative lesion followed by ulceration but did not do for some unaccountable reason. It was of the same nature, as found very often in extensive dry pleurisy running for months a feverless course but suddenly taking febrile type without any exudative process for unaccountable reason, connected as it is with the mysterious process of immunology.

This theory is supported by the following points: (1) rapid and probably lasting healing process taking place, (2) there was very little expectoration, (3) characters presented by the film, not a trace of exudative lesion which is characterized by woolly or cottony appearance can be made out, (4) his younger brother also has got apical lesion in the left side, which is producing no fever and no cough. Only there was loss of appetite for over a year. (He is also under my treatment and is improving markedly, presumably a case of preponderantly proliferative type.)

Now, of the endless eventualities which might have happened, if the findings of the case based either on the clinical findings or X-ray findings were not interpreted correctly, there are two which need be mentioned. (1) Had I not seen the X-ray film at all and treated the case on the supposition that there was no lung lesion, I would have considered it either as an early case or not a case of tuberculosis at all (as there was no expectoration,

there was no chance of examination of sputum for T.B., even if I wished to do it), and so I could not have realised from what serious stage of a disease thought by many as incurable, the patient had recovered. (2) Those who treat their cases mechanically and depend entirely on X-ray findings without trying to realise the amount of recuperative power from clinical findings (absence of physical signs is of no consequence to them, X-ray film being taken on its face value), would have jeopardised his life, as was going to be done by his previous medical adviser—the finding of the lesion would have encouraged him more to take recourse to these measures (gold injection, intravenous calcium chloride, A. P. etc.) where least interference is required. Here, the aphorism where ignorance is bliss, it is folly to be wise, applies with double force.

From this, we can draw the conclusion that, from absence of physical sign in a case enjoying good health but in whom X-ray shows marked lesion in fibrosed state, one can give a good prognosis as a rule, if the healing action is not interfered by injudicious treatment. The next lesson which this case teaches is the phenomenon of hypersensibility which occurred in this case. This hypersensibility is followed by hyper-allergic condition leading to healing.

In this connection, the following quotation from Pottenger is given to illustrate the point:—

“A very important discussion of allergy has entered about the relationship which it bears to immunity. For many years it was taken for granted that allergy is a part of the specific defence which the host develops to combat infection but recently the harmful effects which under certain circumstances may attend it have so impressed certain investigators as to make them doubt that it should be considered in any respect a protective mechanism. Anything that will add to the solution of this question should be welcome.”

Instead of trying to find a solution to this almost insoluble question, the above case may be cited as an example that this very hypersensitive condition in which the patient was found in the beginning which was having an injurious effect on his system, in his losing his health and in his getting fever which was going to kill him (he lost weight from 125 to less than 95 lbs) that helped to produce immunity and so saved his life. It proves that immunity is after all an effect of hypersensibility. This may be likened crudely though, to a motor car running at full speed, the

connecting rod of the front wheel with the steering wheel suddenly snapping, leading the driver to destruction. If this did not happen it would have led him safely to his place of destination.

Case Report.

Date.	Dose of tuberculin.	Weight.	Remarks.
2- 4-38 to 17- 4-38 18- 4-38	Fever period ranging between 100° to 105°		
13- 5-38 to 20- 5-38	1. M Rest period 800,000 Injection given in his house.	95 lbs	No fever Right apex.
28- 5-38	500,000 Allowed to move about in his house.	99 "	
3- 6-38	200,000 Allowed to come to my clinic in a car	108 "	No physical sign
10- 6-38	128,000 Free movement allowed	107 "	
17- 6-38	80,000	108 "	
24- 6-38	50,000	109½ "	
10- 7-38	32,000	110½ "	
	12,000	115½ "	The patient told me that he was examined by the Chief Medical Officer of the Railway in which he was employed as thoroughly as possible, he taking full one hour to do so without being able to find any lesion. The X-ray film and my report of the case, were not shown to him for obvious reason. Anyhow he suspecting a closed case of tuberculosis, gave him permission to join his post entailing light work.
16- 7-38	8,000	115½ "	
24- 7-38	5,000	117 "	No physical sign
31- 7-31	3,000	117½ "	Resumed his work
7- 8-38	2,000	119 "	No physical sign.
14- 8-38	1,000	119 "	No physical sign, doing his duty.
21- 8-38	800	120 "	No physical sign, symptomless, working.
38- 8-38	500	121 "	
4- 9-38	300	133 "	
13- 9-38	200	123 "	
20- 9-38	150	124 "	
27- 9-38	100	125 "	
2-10-38	80	126½ "	Working 11 hours a day.

Reference :

Relation of Allergy to Immunity—by F. M. Pottenger—(Tubercle, July 1935, pp. 458-466.)

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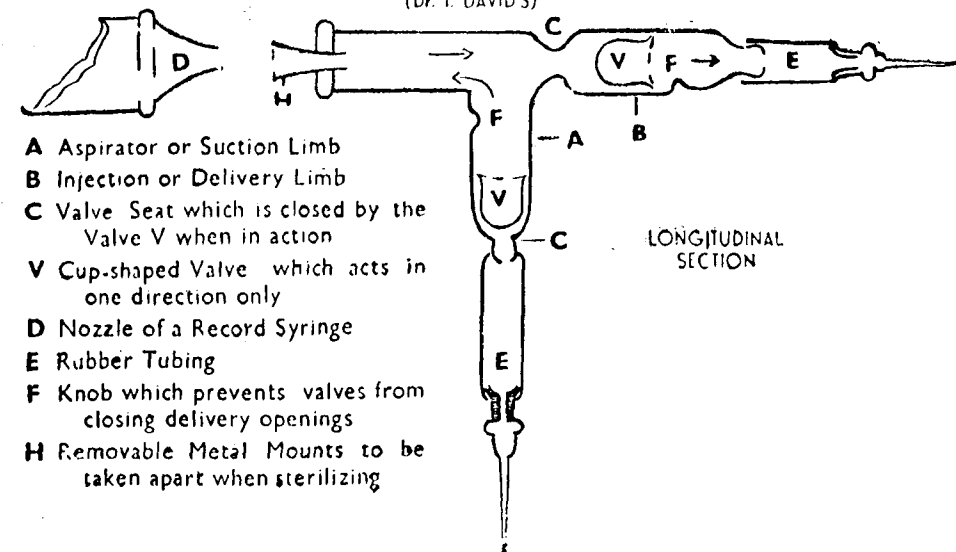


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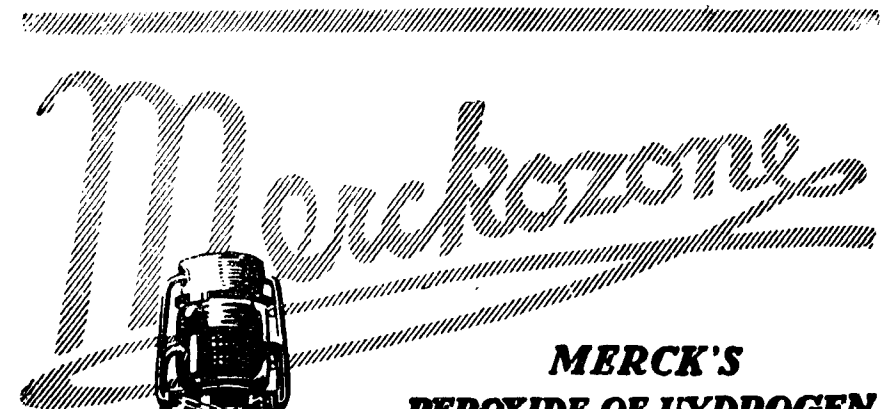
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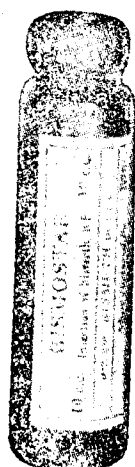


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EDITORIAL

Profession of Pharmacy in India

ELSEWHERE we are publishing the Presidential address of Colonel Chopra delivered before the Third Annual Conference of the Bengal Pharmaceutical Association. In this address, Colonel Chopra has brought out certain interesting facts regarding the profession of pharmacy in India and its intimate relationship to medicine and public health. Because 'Pharmacy', in the sense in which the term is used in Western countries, is non-existent in India, few medical men in India realise the important part which the pharmacists play in matters regarding public health and scientific medical practice. The pharmacists are the custodians of drugs. They prepare, compound and dispense drugs and on their expert knowledge and efficiency will depend to a large extent the purity and potency of the preparations used by the doctors. The busy physician of to-day dealing in diagnosis and treatment of disease, has no time at his disposal to dispense his own medicines, as he used to do ages ago; the wider scope of medicine as a science also makes it impossible for him to devote time systematically to the study of pharmacy. In matters of drugs, their dispensing and preparation, therefore, the physician will have to depend more and more on the advice and guidance of pharmacists. The physician in Western countries now-a-days looks to the pharmacists to give him information in connection with a produce which may have been brought out

only recently. This means that pharmacists have to exercise constant vigilance to keep themselves abreast of ethical medical literature so as to be in a position to discuss such matters with the physician with authority. The relations of pharmacists to the practice of medicine in every day life is therefore intimate and the pharmacists form an integral part of the health service which centres round the medical man.

The need of pharmacists to advance their knowledge and educational qualifications has never been so great as it is to-day, as they are responsible for the dispensing of products of great potency. It is essential that this should be recognized and that by their training, pharmacists will be fully prepared to meet the modern requirements of their profession.

Pharmacy in India is in a most deplorable condition in contrast with Great Britain, the Continent of Europe, the United States of America and in nearly all other civilized countries all over the world. The profession in India is represented by a class of people known as 'compounders' whose status, functions and duties are ill-defined and improperly understood. They compound and dispense medicines including the most potent preparations and deadly poisons, in many cases in complete ignorance of their properties and potency. They also work as dressers, laboratory and hospital assistants, anaesthetists, operation assistants and also as male nurses in many mofussil hospitals and dispensaries. They carry on the duties of the medical officer when he is temporarily away and usually pass as a 'doctor' before the lay public. Many of them, moreover, ply a profitable trade in all sorts of spurious and faked products. In fact, 'compounders' in India form a very heterogeneous group of people who carry on every duty other than their legitimate duty of compounding, dispensing and supplying medicines according to prescriptions of the physician. The evidence produced before the Drugs Enquiry Committee, appointed by the Government of India in 1930-1931, regarding the character and quality of work turned out by the profession as a whole in this country was far from being complementary. All sorts of charges of ignorance, carelessness, lack of responsibility were profusely levelled against it. The weight of evidence was decidedly against the competency of the profession as practised at present and the public and medical men all over India expressed dissatisfaction with its work. This is a very unsatisfactory state of affairs and unless something is done to limit the practice of pharmacy to a properly qualified group of people there is bound to be chaos and considerable difficulties

will arise in the control of the widespread drug adulteration and the spurious drug trade in India.

Pharmacy is a noble profession and has been recognized as such in all the civilized Western countries. There is no reason why the practice of pharmacy in India cannot be brought to the same level as in Western countries. Two things strike one as the most important requirement at the present moment:—First, the improvement of the educational qualification of those who take up the profession and secondly, the enactment of legislation preventing the practice of the profession by unqualified persons. At present, the practice of pharmacy in India is subject to no laws or restrictions whatsoever. The titles of 'chemist' and 'druggist' have no significance whatever as these are freely used by anybody who might choose to do so. There is nothing to prevent the most ignorant person from opening a chemist's shop and dispensing the deadliest poisons whilst the qualified chemist is not protected in any way. There are few opportunities of obtaining pharmaceutical education and, because of lack of suitable opportunities and avenues of employment, there is no incentive to study nor to obtain any degree. The inevitable result is that there are very few qualified chemists in business and the few that are, have to compete with a large number of unqualified charlatans.

But what can be done to put an end to such a deplorable state of affairs? The Drugs Enquiry Committee appointed by the Government of India in 1930—31, carefully investigated the whole question of drug adulteration and spurious drug trade as well as the question of organisation of the profession of pharmacy and came to the conclusion that a comprehensive legislation covering both drugs and pharmacy was urgently needed. The committee recommended that there should be an All-India Drugs Act or a Pharmacy Act or a combined Drugs and Pharmacy Act. For reasons not known to us, the recommendations of the Drugs Enquiry Committee were shelved in spite of the insistent demand for it from various quarters. In 1936, the Government of India introduced a Bill in the Central Assembly known as the "Import of Drugs Bill" which was designed to regulate the import of drugs of inferior quality into British India. This Bill was only a partial measure and cannot prevent the evils of drug adulteration as completely as was envisaged by the Drugs Enquiry Committee. Fortunately, however, this Bill is now withdrawn and the Government of India with the concurrence of the Provincial Governments have now agreed to draft

a more comprehensive Bill on the lines of the recommendations contained in the Report of the Enquiry Committee. Let us hope that this redrafted Bill will contain provisions not only for the control of drugs but also for the control of pharmacy. Pharmacy is an essential public service and without an organized and well controlled profession, the drug control movement initiated by the Government of India will not be successful. The existing problems confronting the profession of pharmacy may be difficult but with government help, there is no reason that it cannot be vastly improved. It is reassuring to see that a good deal of interest is now being evinced by public bodies towards the uplift of the profession of pharmacy in India and if legislation is enacted, it will be a very welcome step and will be of immense benefit to the people.

Special Article.

Blood Pressure in Life Assurance

BY

Member, Medical Board.

United India Life Assurance Co., Ltd., Madras.

IT is only within the past two decades that the measurement of the blood pressure has become an integral part of Insurance examination. Its usefulness in estimating the expectation of life cannot be disputed, if intelligently interpreted in the light of family history and other physical findings. It is a mistake to think that every individual with a high blood pressure will die of it in a prescribed period. A person with an increased pressure might live to be a centenarian and jeer at the over-judicious medical examiner who reckoned his span of life by the column of mercury. But still there is much truth in the old adage that "Man is as old as his arteries". The man with elevated blood pressure is exposed to many dangers, and his expectation of life is distinctly shorter than if his blood pressure were normal. This is well shown by many Insurance statistics available. May gives the following figures of the Prudential Life Insurance Society, which show the mortality in policyholders, 100 being the ratio of actual to expected deaths.

SYSTOLIC PRESSURE.

Not recorded.	...	97.1
Under 140 mm.	...	102.8
140 to 170 mm.	...	133.6
Over 170 mm.	...	219.6
Over 200 mm.	...	827.5

MORTALITY.

Type of Instrument to be Chosen.—All the sphygmomanometers available in the market can be classified under two groups (a) aneroid, (b) mercury manometer. The latter has to be preferred as it is permanently accurate, whereas the aneroid type has to be checked against a mercury manometer at frequent intervals.

Method of Use.—The standard accepted method is to estimate the pressure by auscultation. However, it is advisable to verify the systolic reading by palpation of the pulse, which usually gives a reading of 5 to 10 mm. of mercury lower than that obtained by auscultation. The cuff is applied to the arm a little above the elbow, approximately at the level of the heart. The readings are taken with the proposer comfortably placed in either reclining or sitting position. The cuff is inflated to a pressure well above that at which the pulse at the wrist is obliterated. The stethoscope is applied with moderate pressure over the brachial artery in the cubital fossa and the pressure is gently released until rhythmic sounds are heard. The pressure at which the first rhythmic thump is heard is taken as the SYSTOLIC PRESSURE. As the pressure is gradually released, the beats are heard first louder and then gradually get diminished in intensity until a point is reached where there is suddenly a marked diminution in intensity and the clear sounds become muffled. These weakened beats are heard for a few moments and at a point 5 to 10 mm. lower disappear altogether. The point at which the intensity suddenly diminishes (muffled) is the DIASTOLIC PRESSURE, and not the point at which the sounds disappear. *The dictum that the Blood Pressure is from silence to silence is incorrect.* The practice of estimating the systolic blood pressure by auscultation during inflation is attended with dangerous errors, as in nearly 5% individuals with high blood pressure, the sound disappears at a certain level and as more pressure is put in, it reappears and again disappears at a higher level. This is termed AUSCULTATORY GAP. This mistake can be avoided by checking the auscultatory reading by feeling the pulse at the wrist or by always raising the pressure in the arm band far above the systolic reading and noting the pressure during deflation.

While taking the blood pressure it is always advisable to see that the proponent is not excited as it is not uncommon to have a higher reading in that state. For this his attention may be diverted and several readings taken and an average struck. Though there is some truth in the statement that it is only the

systolic pressure that rises as a result of excitement and not the diastolic pressure, there are on record very many cases where the diastolic pressure also rises appreciably.

When the Head Office calls for explanation for gross differences in B.P. as recorded by two different medical examiners or at two different examinations by the same medical man, too common an answer given is that the proponent was excited at the time of taking the readings. It is unfortunate that still such explanations are offered as the medical examiner is expected to wait till satisfactory readings are taken.

Blood Pressure in Health.—Symonds and Fisher have collected the best statistics from enormous numbers of Insurance applicants of United States of America.

Blood Pressure in healthy men of all builds (Symonds).

Age.	Syst. pressure mm. (150, 419 cases)	Diastolic pressure mm. (60, 733 cases)	Pulse pressure mm.
15 to 19	123.5	79.5	44.0
20 to 24	124.2	80.5	43.7
25 to 29	124.5	81.5	43.0
30 to 34	125.1	82.3	42.8
35 to 39	125.3	83.3	42.0
40 to 44	126.4	84.0	42.4
45 to 49	128.2	84.7	43.5
50 to 54	130.2	85.9	44.3
55 to 59	133.5	86.8	46.7
60 & over.	135.2	86.9	48.3

The above figures are only averages and the pressure in any otherwise normal individual might vary to some extent.

Systolic Pressure.—The rule that the systolic pressure should be the age plus 100 is not a rule but a superstition. Any pressure above 130 mm. in young people and 150 mm. in older people is to be regarded abnormal and risky from Insurance point of view. The lower limit is 100 mm. and one meets not too infrequently very active young men whose systolic pressure is not much more than this lower limit.

Diastolic Pressure.—A diastolic pressure of 100 mm. is to be considered definitely risky and one of 95 mm. very suspicious. In young subjects even 90 mm. is to be regarded as abnormally high and risky.

Pulse Pressure.—The normal pulse pressure varies from 30 to 50 mm. A pulse pressure persistently 20 mm. and low, or 50 mm. and above is to be considered definitely abnormal.

Age and Blood Pressure.—After adolescence, the blood pressure in healthy individuals increases but little with advancing years, until old age is reached. With senility, the systolic pressure rises while the diastolic pressure shows much less change. So in older people the pulse pressure is usually increased.

Sex and Blood Pressure.—There is no appreciable difference in B.P. in young individuals of either sex. After the onset of adolescence, the pressure in men is slightly higher than in women. "The extensive Insurance statistics of Symonds show that up to the age of 40, the systolic pressure of males averages only 1 to 2 mm. more than in females, a negligible difference. After 40 years, however, with the onset of menopause, there occurs an inversion and the blood pressure of the females rises decidedly above those of males. These differences are probably connected with the functioning of sex glands."

Blood Pressure and Weight.—In obese individuals, the tendency is for rise in the blood pressure. A proposer with overweight and high blood pressure is a bad subject from Insurance point of view. Also they might be suffering or are likely to suffer from diabetes mellitus. So, it is of paramount importance to record blood pressure in all subjects who are of overweight even though they are young. A low blood pressure in a lean (asthenic) individual of underweight is attended with equally bad risks. Such individuals are susceptible to pulmonary tuberculosis and cannot stand infectious diseases.

Race and Blood Pressure.—The blood pressure of the Eastern races is accepted to be slightly lower than the Occidents. Originally it was considered to be due to predominant non-vegetarian diet of the Westerners but the statistics available in Madras, though scanty, show that there is not much truth in it.

Altitude and Blood Pressure.—The blood pressure is not appreciably altered in people living in moderately high elevations.

Diurnal Variations in Blood Pressure.—During the day the blood pressure is slightly higher in the afternoon hours. When once sound sleep has set in, the pressure falls upto 20 mm. The diastolic pressure does not fall proportionately.

The Effect of Mental and Muscular Work on Blood Pressure.—Moderate amount of physical exertion produces little or no change in the blood pressure. Excessive mental work, emotions,

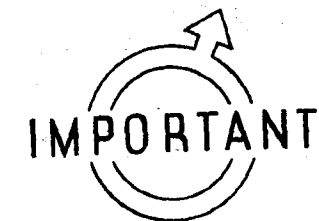
worry, fear and grief elevate the pressure. Here too it is the systolic pressure that easily fluctuates. When the blood pressure is above the average standard, the examiner has to investigate and try to find the underlying cause and communicate to the Head Office.

The etiological factors of hypertension can be broadly classified into two main groups—(1) ESSENTIAL HYPERTENSION OR HYPERPIESIA, (2) SECONDARY HYPERTENSION.

The aim of the examiner is to eliminate carefully the causes of secondary hypertension, chief among them being: (a) Kidney disease. (b) Thyroid disease (hyperthyroidism). (c) Diabetes Mellitus etc. The importance of this will be understood when one realises that primary hypertension is a disease which usually lasts for many years or even three or four decades before death occurs either as a result of the disease or some independent malady. On the other hand, the expectation of life of individuals suffering from secondary hypertension is much short unless the primary malady is treated properly in its initial stage.

Essential Hypertension.—This is a condition in which the blood pressure is raised due to some, as yet unknown, cause. The statistics so far available clearly show that there is hereditary influence. In its early phase, it is usually unattended with any pathological symptoms. When once the subjective symptoms are noticed, the average duration of life is about ten years. Figures derived from Insurance statistics will show a longer expectation of life as in them, no symptoms would have set in at the time of examination. The younger an individual with essential hypertension, the more serious the prognosis. Individuals having essential hypertension have a marked predisposition to cerebral hæmorrhage and angina pectoris.

Remarks.—The importance and usefulness of blood pressure in Insurance examination is now realised by all life assurance companies. Hitherto, the authorities insisted on having the blood pressure of proposers above 40 years or when the sum assured exceeded Rs. 5000/-. I would suggest that in future all companies should insist on having the blood pressure of every proposer. This will be of immense value to collect correct statistics and interpret, in future, the significance of blood pressure in Indian lives. Also many young subjects having essential hypertension will be spotted. Lastly, the data will be of much use in estimating the expectation of life of proposers in whom there is a family history of apoplexy or who have a diathesis for adiposity.



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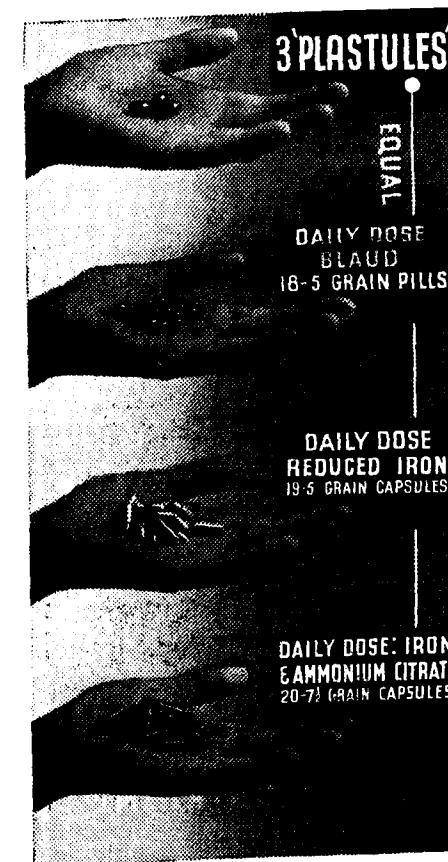
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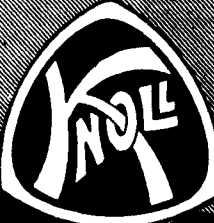
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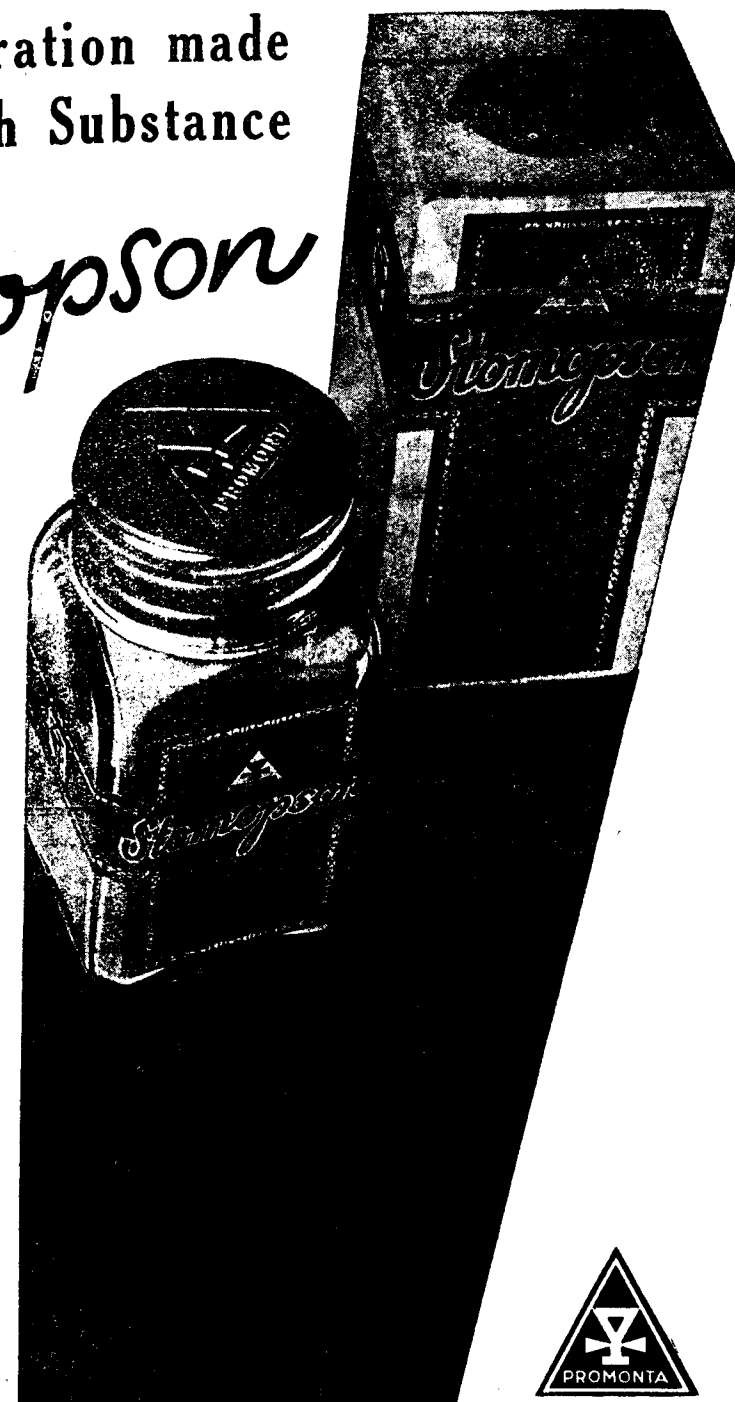
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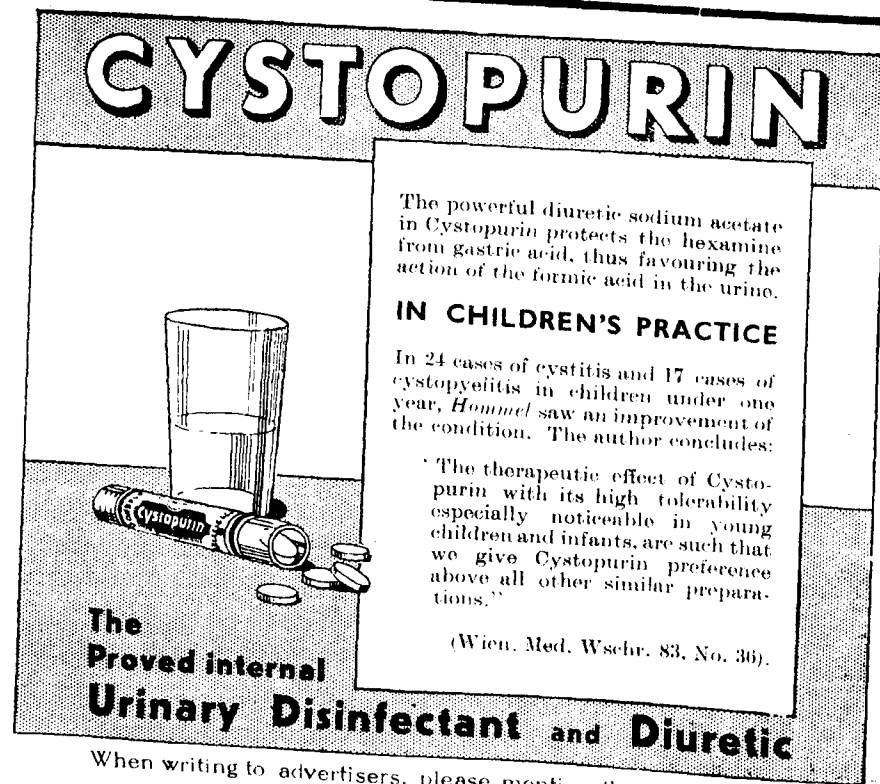
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GLEANINGS FROM MEDICAL PRESS

Medicine and Therapeutics

The Causation of Cirrhosis of The Liver.—A large amount of hepatic cirrhosis is claimed to be syphilitic in origin. In the cases recorded by Schumacher the infection dated from ten or more years.

Although syphilis alone can be answerable for the cirrhosis, yet alcoholism and syphilis, when combined, still further predispose the patient to cirrhosis of the liver.—*Medical World*.

Vitamin C in the Treatment of Hæmorrhage After Childbirth.—Continued hæmorrhage during the puerperium, occurring in winter and in the spring, is claimed to be the result of a deficiency of vitamin C. In these cases vitamin C is stated to be more potent as a hæmostatic than ergot preparations.

At first, 200 to 300 mg. injected daily, after two to three days 100 to 150 mg. for four to six days, and ceasing when the hæmorrhage stops. As the internal administration is too slow in action, injections were always used.

Fruits containing vitamin C are recommended to be eaten during the last months of pregnancy.—*K. Klingspohr, Deut. med. Woch.*, 1937, 43.—*Medical World*.

The Availability of Calcium in Spinach, in Skim Milk Powder, and in Calcium Oxalate.—by B. W. Fairbanks and H. H. Mitchell. *Jour. Nutrition*, 16:79 (No. 1) 1938.

The availability of the calcium of fresh "home-cooked and canned spinach" has been compared with that of the calcium of skimmed milk powder prepared by the spray process. The availability of calcium oxalate has been determined by comparing the retention of calcium from a diet containing a liberal amount of calcium mainly in the form of calcium oxalate, with that of a diet containing an equal concentration of calcium as calcium gluconate. The conclusions are as follows: (1) The calcium of spinach, in either the fresh, cooked (open kettle), or canned form, is very poorly utilized for the maintenance and growth of rats; in all probability it is quite unavailable under conditions permitting a very high utilization of milk calcium. (2) Calcium oxalate appears to be entirely unutilizable by the growing rat.—*I.C.—Jour. P. I. M. A.*

The Nature of the Lowered Resistance to Infection in Diabetes Mellitus.—by A. Marble, H. J. White, and A. T. Fernald. *Jour. Clinical Investigation*, 17:423 (No. 4) 1938.

It is a well known fact that patients with diabetes have less resistance to infection than normal individuals. The nature of the lowered resistance to infection in case of diabetes is to a large extent unexplained. There are various factors that may explain the cause of the lowered resistance to infection in diabetes and they may be summarized as follows: (1) Increased sugar content of blood and tissues; (2) decreased activity of blood elements associated with resistance to infection: (a) subnormal activity of complement; (b) subnormal phagocytizing capacity of leucocytes; (c) subnormal bacteriostatic and bactericidal action of whole blood; (3) inadequate functioning of fixed tissue cells; (4) lowered capacity of tissues to react to antigenic stimuli; (5) lowered state of general cellular nutrition. In this investigation the authors have found that fresh defibrinated blood and heparinized whole blood of diabetic patients possessed essentially the same phagocytic, bacteriostatic, and bactericidal powder against selected strains of streptococci as blood from normal controls. Results in individual cases could not be correlated with the duration, severity, or state of control of the diabetes:—I. C. —*Jour. P. I. M. A.*

The Treatment of Burns with Local Applications of Cod-Liver Oil.—In 1929 Loehr began to use cod-liver oil locally in the treatment of infected wounds and various suppurative processes, and obtained excellent results. Later this investigator applied it also to burns, and in 1934 he published a review of 130 cases of burns of first, second, and third degrees so treated.

Loehr originally suggested the use of an ointment made up of one part of cod-liver oil and three parts vaseline. This ointment is applied about one finger thick over the entire burned area. The area is furthermore covered with light gauze, and a light cast-bandage is applied. The part is re-dressed every ten days.

Chinaglia began to use Loehr's method in 1935. At first he used sterilised cod-liver oil, but the results obtained were mediocre. After having learned that the common pus organisms do not grow in the oil, the unsterilised product was used.

Thirty-five burns of first, second, and third degrees were treated as follows:—

The burn is first treated with gauze soaked in a 5 percent.

solution of picric acid; and after 24 hours the vesicles are opened, the dead skin is removed, and pieces of gauze soaked in pure, unsterilised cod-liver oil (without vaseline) are applied. A simple bandage is made and the part is kept immobilised by means of a splint, if necessary. The bandage is left in place for from four to six days and is then renewed. It is imperative to excise all the vesicles, otherwise healing is greatly delayed and secondary infection may supervene.

Sixteen typical cases of thermic as well as caustic burns were treated in this fashion. Six of these were of the third degree, and they healed without leaving a scar.

The application of cod-liver oil to burns is claimed to have the following advantages; (a) it is painless; (b) it produces a rapid epithelisation with subsequent rapid healing of second-degree burns within from eight to twelve days; (c) it prevents secondary infection by inhibiting bacterial growth; (d) in third-degree burns the necrotic parts are rapidly cast off and epithelisation is so complete that grafting becomes unnecessary; and (e) the newly-formed skin is delicate, no scars may be distinguished, no keloids develop, and the cosmetic effects obtained are satisfactory.—*Chinaglia, A., La cura delle ustioni con applicazione locale di olio di fegato di merluzzo, Clin. Chir., 1937, 13: 843. —Medical World.*

Ether Narcosis and Carbohydrate Metabolism.—by C. L. G. Pratt. *Proceedings of the Royal Society of Medicine*, 31:971 (No. 8) 1938.

In this investigation, the author has tried to study the degree of interference with carbohydrate metabolism produced by ether narcosis. He also studied the duration of this effect and the nature of hyperglycemia produced whether it is of the nature of a compensatory phenomenon or whether it is a pathological derangement of function. He found that the effect of ether seems to be two-fold. The primary glucose mobilization apparently brought about by adrenaline may or may not be followed, according to the depth of anesthesia, by a secondary, and probably more profound, interference with the normal course of sugar utilization. The effect is not specific to ether, being shared by other anesthetic agents. There is little evidence to suggest that the rise of blood-sugar is other than a welcome physiological compensatory phenomenon.—I.C.—*Jour. P. I. M. A.*

PROCEEDINGS OF CONFERENCES, SOCIETIES, ETC.

Bengal Pharmaceutical Association, Calcutta

Third Annual Conference

PRESIDENTIAL ADDRESS

BY

BREVET-COLONEL R. N. CHOPRA, C.I.E., K.H.P., M.D.,
Sc.D., (CANTAB), F.R.C.P. (LOND.), I.M.S.,

Gentlemen,

Pharmacy and Public Health.

I WILL start by saying that the Profession of Pharmacy is an integral part of the noble Profession of Medicine and in almost all progressive countries in the world, it is an important link in the chain of educational programme designed for public service, public welfare and public utility. In these days, there are unquestionable signs of national awakening in every department of life in this country and which department could be of greater importance for sound nation building than the one concerned with public health? No wonder then that in every province of India, ways and means are being devised which will improve the health of the people and provide them with better facilities for prevention and cure of disease. One of the important factors which will contribute largely towards the attainment of this object is an efficient medical and public health service, of which the profession of pharmacy and control of food and drugs forms an integral part.

Pharmacy in India and the Work of the Association.

Training of Pharmacists:—It is a matter of great concern to me that the profession of pharmacy in India is even now not properly organised and unless an Association such as this makes a genuine effort to devise ways and means to improve the existing state of affairs, there is danger of matters drifting from bad to worse. In an address to this Association on a former occasion not long ago, I dwelt on the deplorable state of pharmacy in this country and how this state of affairs could be remedied. I need not therefore dilate on it again. It will suffice here to state that the training of the pharmacists in India is most unsatisfactory and is not at all commensurate with the duties and responsibilities attached to their calling. Pharmacy is a definitely neglected profession in this country

and the advantages accruing from the promotion of pharmaceutical education have not been sufficiently appreciated. If the present needs of the country in the matter of an efficient public health service are to be adequately met and if the tremendous undeveloped drug resources of the country are to be utilised, it is essential that the training of the pharmacists should be improved. Secondly, it is important that a correct conception of the nature of the profession and its functions and importance should be appreciated by the public. For this purpose an active educational propaganda has to be carried out.

II. Control of Drugs

The control of drug adulteration is, as you will all agree, an essential part of any public health campaign. Let us for a moment visualise the state of affairs existing in India at the present time with regard to drugs. From all the evidence that is available, both published and unpublished, there is hardly any room for doubt that the market in India is flooded with drugs and chemicals of defective strength and inferior quality. A large number of the most useful and important medicinal drugs on the market in India are often grossly and systematically adulterated to an extent difficult to imagine or believe in a civilised country. On account of low economic condition of the people, the desire for cheapness in every sphere of human endeavour has been the bane of our life in India. In order to satisfy the demand for 'cheap' remedies that would fall within the meagre means of the people in general, substitution of genuine medicinal products by rubbish has been resorted to by a number of manufacturers both indigenous or foreign. Potent remedies such as sera and vaccines, antigens, organic arsenic and antimony compounds are being freely sold without their quality having ever been tested. The position emphatically is a source of very great danger to the public. Adulteration in other spheres might lead to a mere financial loss but in the case of medicinal drugs, it takes a heavy toll of human life.

I might mention in this connection the enormous growth of trade in quack remedies that has occurred in India during the last two decades. It is well known that there is at present no law in this country to prevent anyone from compounding any mixture he chooses to make, active or inactive, and selling it as a cure for any disease, backed by testimonials written by himself or by unknown physicians, provided he avoids the drugs scheduled under the Dangerous Drugs Regulations. Anyone can prepare and sell new drugs, without proper preliminary tests, using, as Lord Horder recently described it, the public as his "guinea-pig". Deliberately misleading labels and descriptions can be attached to any fancy product without any risk of prosecution for fraud. To add to all these, false and misleading advertisements extolling the virtues of prepa-

rations which do not exist and making highly exaggerated claims are daily encountered. In fact, all sorts of trickery and fraud are rampant in the drug market in India. The harmful effects of such nefarious practices to the public are too well known to the medical practitioner, but I am afraid are not sufficiently appreciated by the public in general. The enormous damage done to the health of the people by such traffic in spurious drugs can be readily appreciated even on a cursory examination.

The Remedy.

But what can be done to put an end to such a deplorable state of affairs? It must be said to the credit of the medical and pharmaceutical professions that they have been fully alive to the seriousness of the situation which has arisen and have made creditable attempts to put an end to the deplorable state of affairs. It will be recalled that as a result of the insistent demand from all quarters, the Government of India in 1930 appointed an *ad hoc* committee—the Drugs Enquiry Committee—with the following terms of reference.

- (1) To enquire into the extent to which drugs and chemicals of impure quality or defective strength particularly those recognised by the British Pharmacopoeia, are imported, manufactured, or sold in British India, and the necessity in the public interest, of controlling such importation, manufacture and sale, and to make recommendations.
- (2) To report how far the recommendations made in (1) may be extended to known and approved medicinal preparations other than those referred to above, and to medicines made from indigenous drugs and chemicals; and
- (3) To enquire into the necessity of legislation to restrict the profession of pharmacy to duly qualified persons, and to make recommendations."

Of this Committee, I was appointed the Chairman and this gave me the opportunity of carefully investigating the whole question of drug adulteration and spurious drug trade from every point of view. I realised from the very beginning that organisation of the profession of pharmacy on proper lines was an essential prerequisite of any scheme for the control and restriction of adulterated and spurious drugs in the Indian market. In the report of the Drugs Enquiry Committee you will find a scheme for putting the profession of pharmacy in this country on a solid foundation. The pharmacists are the persons who directly deal with the drugs. They are, in fact, the custodians of drugs; they are the people who prepare and compound medicinal preparations and on their efficiency

depends the purity and effectiveness of the medicaments. If there is no healthy and effective co-operation from this class, no satisfactory solution of the problem of drug adulteration will be found.

Legislation to control Drugs and Pharmacy.

With this idea in view, the Drugs Enquiry Committee suggested the enactment of legislation to control both drugs and pharmacy, either by a combined Drugs and Pharmacy Act, or by a Drugs Act and a Pharmacy Act separately as may be found convenient. If a separate Drugs Act and a separate Pharmacy Act are enacted, these should be passed simultaneously and should operate concurrently. The Committee also recommended that the legislation should be *central* embracing the whole of India in its scope. Further progress has however, been slow since April, 1931, when the Report of the Drugs Enquiry Committee was submitted to the Government of India, owing no doubt to the very complicated nature of the task. It was therefore a matter of genuine satisfaction to every body concerned when the Central Government as a first step in the direction of the much needed drug control, established the nucleus of a Central Drugs Control Laboratory—the Biochemical Standardisation Laboratory—at the All-India Institute of Hygiene and Public Health in 1937. Such a laboratory is, of course, essential in order to evolve definite 'norms' or standards for conditions existing in this country, in order of medicinal preparations in the market. This laboratory has now functioned for about a year and a half and has accumulated a large amount of data regarding the quality of the drugs in use in this country by making a systematic analysis of medicinal preparations from all parts of India, both those manufactured in the country and those imported. Standards are also being worked out suitable for the climatic conditions prevailing here, but the legislation that can enforce such standards has to be enacted before this unit can be of any practical use.

Import of Drugs Bill.

An imperfect piece of legislation under the name of 'Import of Drugs Bill' was introduced in the Central Legislative Assembly and went to the Select Committee stage in October last, 1937. It would appear from the statement of objects and reasons accompanying the Import of Drugs Bill, that the manufacture, storage and sale of drugs, as also the control of pharmacists and pharmaceutical education, were essentially for provincial governments to deal with, that the Government of India were precluded on technical grounds from undertaking the necessary legislation, covering all aspects of importation, manufacture, storage and sale of drugs without the permission of the provincial governments concerned. Strong protests against this piece-meal legislation were expressed

by the representatives of the drugs industry all over India as also by the representatives of the pharmaceutical profession. In its issue of March 21, 1938, the leading daily paper of India, the Statesman, in an editorial pronounced the Import of Drugs Bill, as a "very inadequate measure of defence against the evil it aims at overcoming" and remarked that "what the Government of India is doing cannot be regarded as action as a whole, for the Bill deals only with imports and importers, a limitation that will certainly not put an end to adulteration but will put honest importers at the mercy of the dishonest manufacturers or distributors in this country." The *Indian Medical Gazette* also made a plea for instituting "action as a whole", as recommended originally by the Drugs Enquiry Committee. In fact it was clearly felt on all sides that any piece-meal legislation would defeat the object for which the Indian public opinion has been agitating for such a long time. It no doubt augurs well for the future of Indian Drug Industry and all connected with it, that the Select Committee was adjourned *sine die* after expressing the opinion that the proposed legislation is only a half measure and to be of real benefit to the country, it must be substituted by a more comprehensive legislation embracing All-India within its scope on the lines of the recommendations contained in the Report of the Drugs Enquiry Committee.

The Central Government had their difficulties as under the new constitution it cannot undertake such a legislation without the explicit consent of the provinces. Opinion of the Provincial Governments were therefore, invited with regard to this important question. It is pleasing to note that most of the provinces have not only agreed to the enactment by the Central Legislation but some are even contemplating passing their own legislative measures to control manufacture and sale of drugs within the area under their jurisdiction. All legal difficulties and the question of jurisdiction between the central and provincial subjects has thus been settled and it may be confidently hoped that there will be no further delay in placing the All-India Drug and Pharmacy control legislation on the statute book in the near future. A complete legislation covering both drugs and pharmacy will undoubtedly remedy the crying need of this country in the matter of drug control. A representative body such as yours which is vitally interested in this question should do all that is possible towards the attainment of this object. The Government of India, I feel sure will be only too glad to give due consideration if you can present your case to them.

Building up a Profession of Pharmacy

Lastly, I wish to impress on you, gentlemen, that the changes necessary for the building up of a profession of

pharmacy on sound lines cannot be effected at once. Time, hardwork and patience are needed but, there is no reason to be pessimistic. With the aims and objects of the Association always before us and with the active co-operation of members drawn from the ranks of manufacturing pharmacists, pharmaceutical chemists and members in active drug trade, we can and should be able to develop a unique organisation which will work in unison towards promotion of the interests of ethical drug trade and stand solidly against all sorts of base and nefarious practices such as, drug adulteration, price cutting, tampering with quality, etc. It is quite possible within the folds of the Association, to develop a code of high ethics and morals and to foster a feeling of good will amongst all who are directly or indirectly interested in drugs from academic and scientific point of view and from the point of view of public utility. It is reassuring to see that there is already some evidence of a greater interest being displayed in this direction among all concerned and I may confidently hope that the problems, though difficult, will ultimately be satisfactorily solved. If pharmacy has been able to attain its rightful place in other countries, it is not impossible for it to attain a similar position in India if only you have the will to do it. I have every hope that this Association will be able to organise and carry out the important work of up-lift with utmost zeal and energy.

Gentlemen, I will not take more of your time as we have more work before us. It only remains for me to express my sense of deep appreciation and gratefulness to those who have worked on behalf of the Association during the past year. I am particularly indebted to my friend, Prof. B. N. Ghose who carried on the duties of the President, while I was away in England and who has never grudged his co-operation whenever approached. To my former pupil and now my co-worker Dr. B. Mukerji, the General Secretary, and to Mr. P. Das, the Organizing Secretary, I am grateful for the many ways in which they have served as official representatives of the Association and have contributed to the well-being of the Association. I know that wherever they have gone they have made friends for us and have clearly demonstrated the advantages to be gained by making these broader contacts. The members of the Council have been very helpful, as have also those who have given freely much of their valuable time to Committee work.

In conclusion, I thank you once again for the great honour you have done me.

The Kistna Subsidised Rural Medical Practitioners' Association

A special meeting of the above Association was held at Bez-wada in the Govt. Hospital at 3 P. M., on Sunday 6-11-'38, when Dr. H. Halge of the Local Hospital presided. Dr. N. Rama Rao, the Secretary read the minutes of the previous meeting, which were passed and the address by Dr. V. Rama Kamath, the President, P. R. M. A., who was invited for this meeting but, who could not go over there on account of unavoidable domestic inconveniences, was read over to the members.

The meeting, then passed unanimously the following resolutions:—

(1) This Association expresses its deep sorrow on the death of Dr. K. Venkaiah, R. M. P. Chennur and resolves to convey its sympathies to his family in bereavement and authorises the Secretary to communicate the same to the deceased's family.

(2) This Association resolves that the Kistna Dt. S.R.M.P., Association be converted into the Kistna Branch of the Provincial Subsidised R. M. P. Association; and that Dr. S. S. Rama Rao of Kanumole, be elected as the Representative to the Provincial Committee of the P. S. R. M. P., Association.

(3) This Association views with great concern, the Govt.'s move as per their memorandum 34730-1-D₂ P. H., dated 30-9-'38 to curtail or abolish the Subsidy and medicines now given to the R. M. P.s and requests the Govt. to drop it forthwith as such a step would be ruinous both to the R. M. P. as well as to the poor village patients whom he is expected to serve.

(4) This Association is of opinion that the Honarorium fixed for the R. M. P., doing Public Health work in G. O. No. 2639 dated 21-7-'38 is too low, when compared to the loss of private practice and the amount of work to be done and requests the Govt. to so alter the G. O. as to fix the honarorium, not lower than Rs. 30 per mensem, with a Vaccinator to assist him. It further requests the Govt. to give the usual subsidy, while on Health training in addition to the proposed honarorium of Rs. 25 for the period.

(5) Resolved to request the D. M. O. Kistna to afford facilities to the R. M. P.s in the District to attend operations and study cases in the Head Qrs. Hospital during Sundays and Public Holidays not exceeding four days in the month and also to arrange for bedside clinics and Post graduate lectures on the Penultimate Saturdays.

(6) Resolved to request the District Board, Kistna, to uniformly sanction a fixed contingency of Rs. 5 per month for each Dispensary and do away with the present practice of

granting of the actual expenses incurred and that too up to Rs. 3 and qualified by Vouchers and Certificates as such a procedure is most cumbersome and time-consuming.

(7) This Association brings to the notice of the Govt. the delay and irregularity in the supply of medicines and the resultant dislocation of work and requests the Govt. to so arrange the supply as to reach the R. M. P. not later than a date fixed and also see that all medicines indented for, are supplied in one time without instalments as is being done at present.

(8) This Association thanks the Govt. for having done justice in reinstating the R. M. P. Pallewada who was undjustly thrown out of service for no fault of his, and resolves to request them to sanction his subsidy for the intervening period.

(9) Resolved to request the Govt. to give effect to the Resolution No. 18 of the P. S. R. M. P.s Conference passed on 10-7-'37 as such a course would create an atmosphere in which the R. M. P. would be able to do more useful work.

ANNOUNCEMENTS

M. & B. 693 in Pneumococcal Infections.

We have received from Pharmaceutical Specialities (May & Baker) Limited, a copy of a booklet entitled "M. & B. 693 in the Treatment of Pneumococcal Infections." This publication deals with the method of administration of M. & B. 693, the dosage scheme to be adopted in cases of lobar pneumonia in children and adults, and broncho-pneumonia in children. A further section gives general notes on the treatment of other forms of pneumococcal infections.

We are advised that copies of this booklet are available to members of the medical profession on request.

Messrs. Oliver and Boyd have sent us of the new work *Clinical Obstetrics* by A. L. Mudaliar, B.A., M.D., F.C.O.G., Government Hospital for Women and Children, Egmore, Madras.

Modern in its teaching, well illustrated and including a comprehensive section on tropical diseases in relation to obstetrics, it will be of great value to practitioners and to students in India, the East, and other tropical countries.

It consist of 896 pages with 218 illustrations. Elaborate review will appear in an early issue.

NOTICE

The 29th Annual Conference, Gauhati (Assam.) All India Medical Licentiates' Association

An appeal

S. Das, General Secretary, Reception Committee, writes as follows :—

We have the pleasure to inform the Members of the Profession, at the Scientific Section of the 29th. All India Medical Licentiates' Association, will be held on the 26th. December 1938.

As this is the first of its kind to be held in Assam, and as Gauhati, the venue of the Conference, is a place of Religious, Cultural, Political and Industrial importance, large number of medical men and visitors are expected to attend. Besides these, the Conference will give ample opportunity to the medical men, to have discussions on matters of Scientific and professional interest.

We request the members of the profession to contribute Scientific papers to the Conference and to attend the same.

Programme

- On 24th Dec. '38. 9-30 to 11-30 A.M.—Subject Committee.
 " — 1 — to 4 P.M.—Main Conference.
 " — 4-15 to 5 P.M.—Opening of the Exhibition.
 " — 5-30 to 7 P.M.—Scientific Demonstrations.
 " — From 7-30 P.M.—Subject Committee.
 On 25th Dec. '38. 7-30 to 10-30 A.M.—Subject Committee.
 " — 12 — to 2 P.M.—Open Conference.
 " — From 2-30 P.M.—Excursion.
 " — " 4 P.M.—Health Demonstrations.
 " — " 5 P.M.—Social Gathering.
 On 26th Dec. '38. 7-30 to 12 Noon—Scientific Conference.
 " — From 4 P.M.—Health Lectures and Scientific Demonstrations.

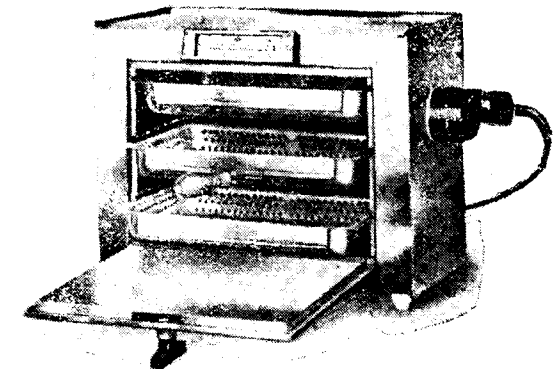
Local time will be observed. (Gauhati local time is 37 minutes earlier than standard time).

We are glad to learn that Dr. Manishankar H. Tripathi, Senior Grade Sub-Assistant Surgeon, Jamnagar, Kathiawar, has been promoted by His Highness, the Maharaja Jam Sahab of Nowanagar, as Deputy Assistant Surgeon, in view of his long and meritorious service of 31 years to the State and also in view of the 2 professional books he has written. We take this opportunity of congratulating him on his elevation and wish him many more years of useful service to the State, the Profession and the Public.

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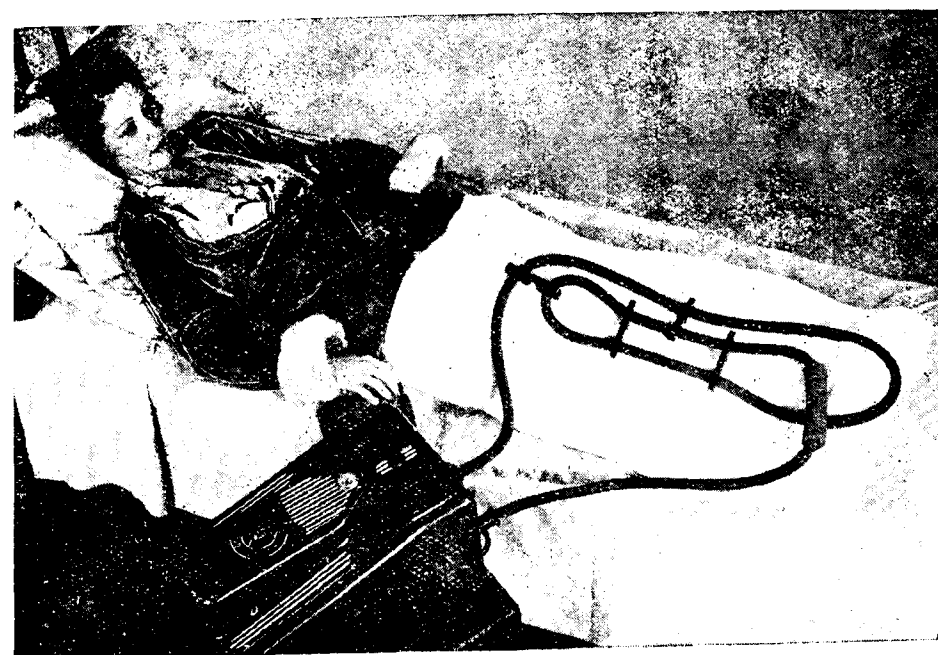
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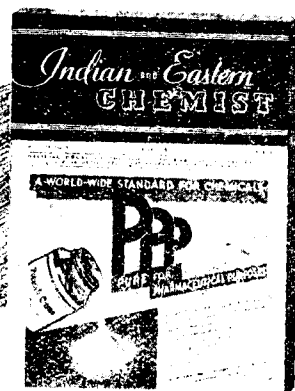
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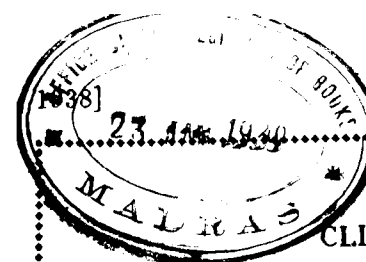
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Original Articles:—1. Deductions from Experience in a Tuberculosis Ex-Patients' Colony in India. *By:*—P. V. Benjamin, M.B., B.S. (Mad.), T.D.D. (Wales), and R. M. Barton, M.A. (Oxon); 2. The Seriousness of Tuberculosis in India as shown by a study of Incidence and Type. *By:*—P. V. Benjamin, M.B., B.S., (Mad.), T.D.D. (Wales); 3. Methods of Destruction of Tubercle Bacilli in the Sputum for Use in Indian Homes, with Some Experiments. *By:*—R. M. Barton, M.A. (Oxon); 4. A Study of the Anti-Tuberculosis Activities in the West, with Some Suggestions for the Campaign against Tuberculosis in India. *By:*—C. Frimodt-Moller, C.B.E. (Hon.), M.B., Ch. B. (Copenhagen); 5. The Campaign Against Tuberculosis in Italy. *By:*—T. J. Joseph, B.A., M.B., B.S., (Mad.); 6. Anti-Tuberculosis work in Bengal. *By:*—A. C. Ukil, M.B., M.S.P.E. (Paris), F.S.M.F. (h.c.), F.N.I., (with 6 figures); 7. Tuberculosis in the Zenana. *By:*—Rose A. Riste, D.S., M.D. (with 1 chart consisting of 2 figures and 2 graphs); 8. Role of Solaria in Anti-Tuberculosis work. *By:*—B. Jayaram, M.B., B.S., T.D.D., L.R.C.P. & S. and A. K. Sheriff, M.B., B.S., T.D.D. (with 3 figures); Special Article. B. C. G. Vaccination in Practice. *By:*—L. Negre. and R. K. Goyal, D.Sc., Ph.D., M.R.C.P.

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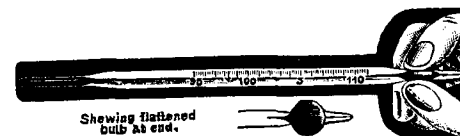
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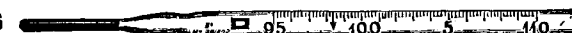
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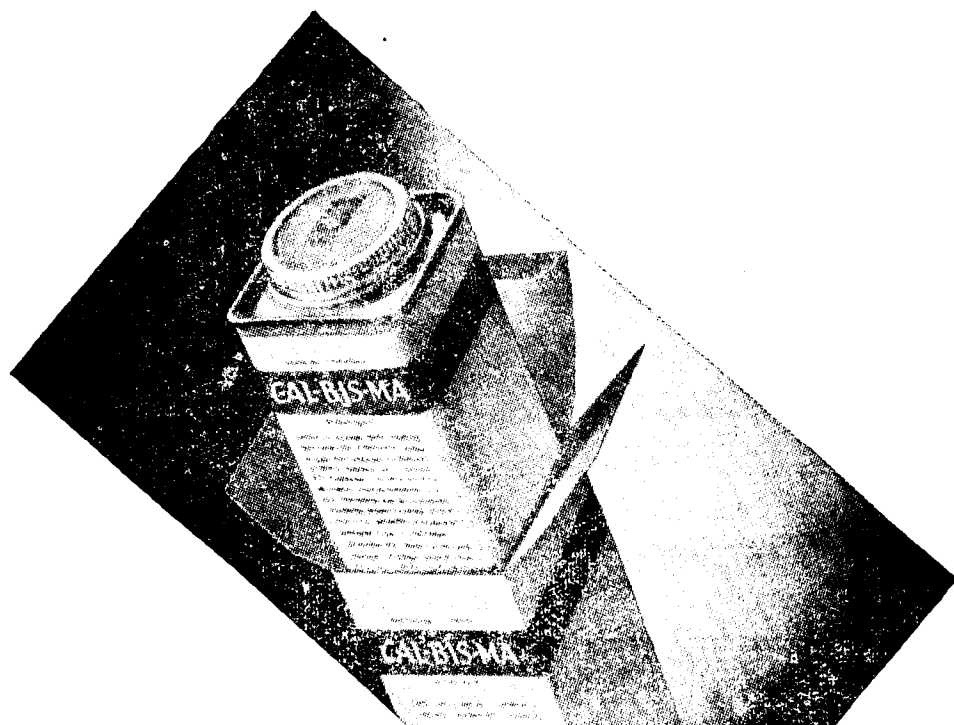
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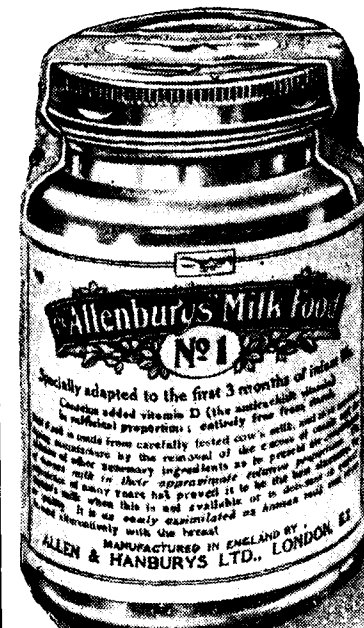
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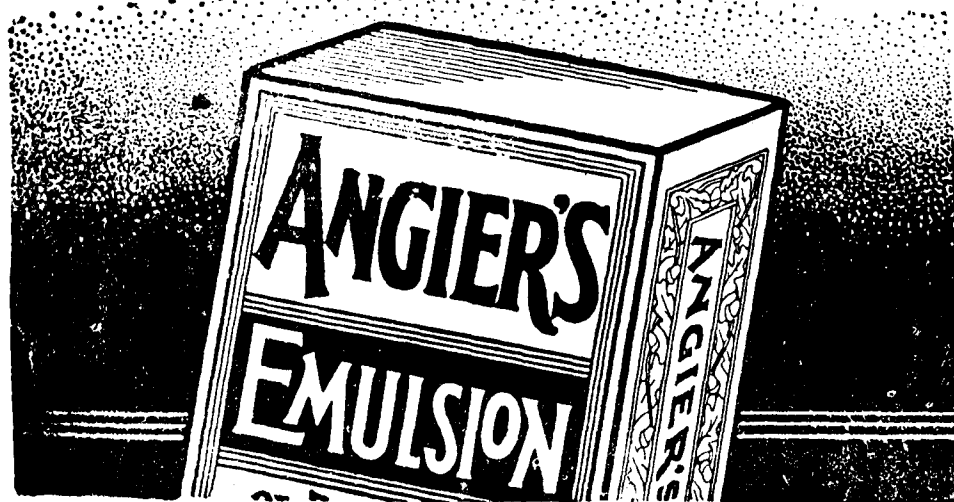
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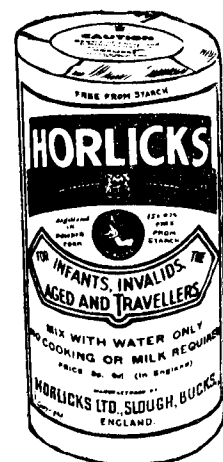
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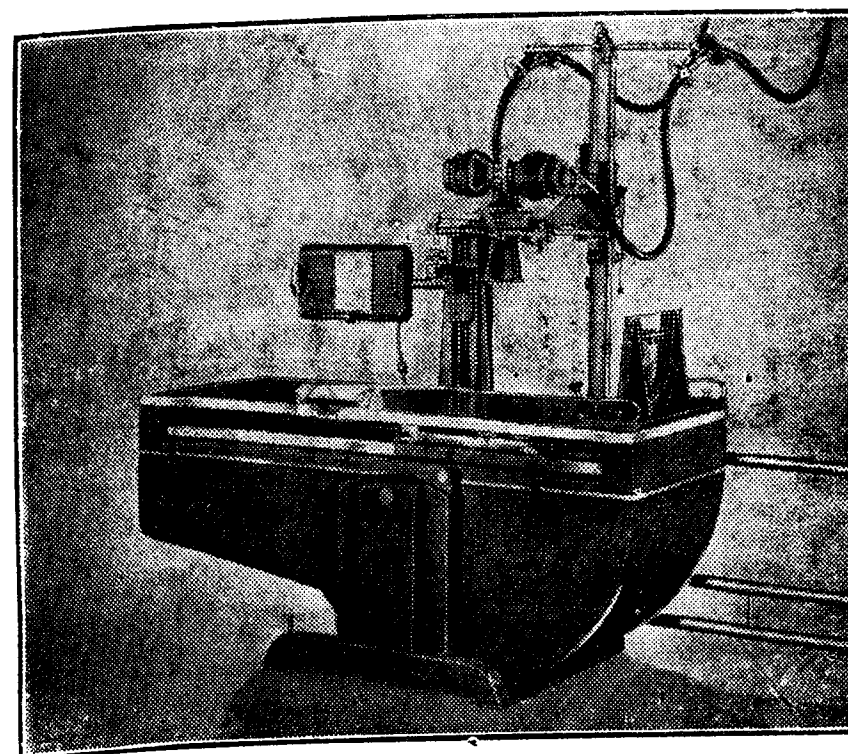
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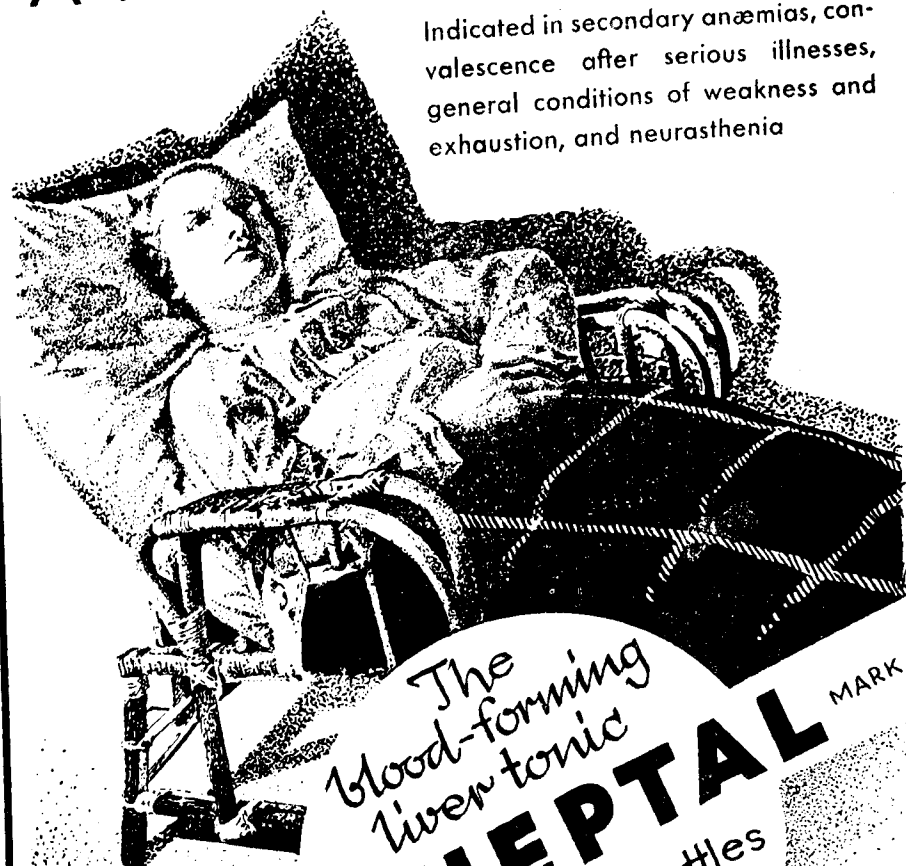
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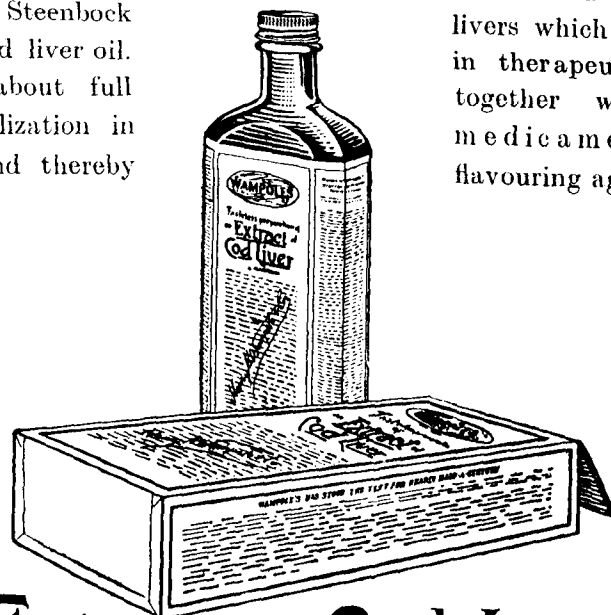
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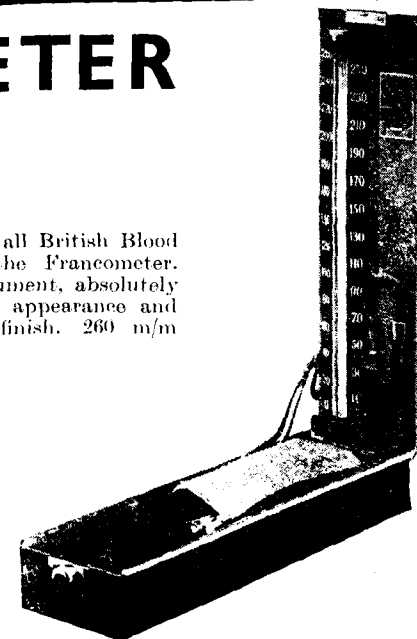
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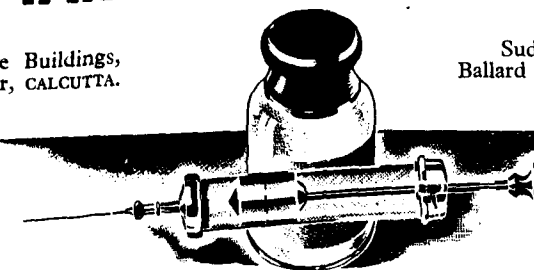
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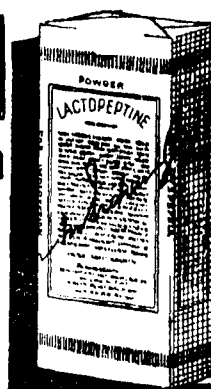
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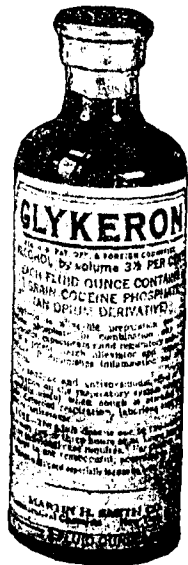
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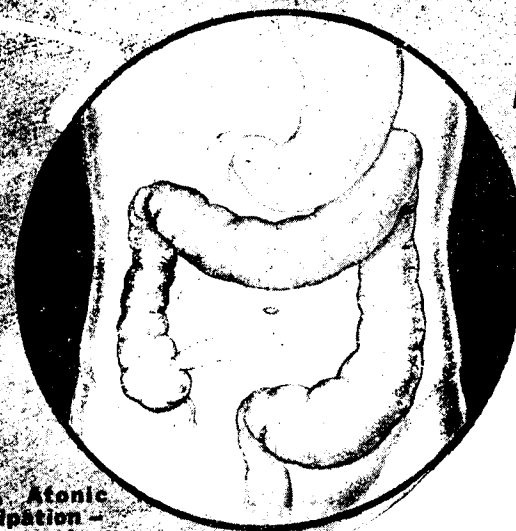
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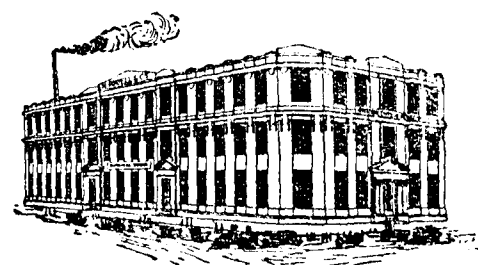
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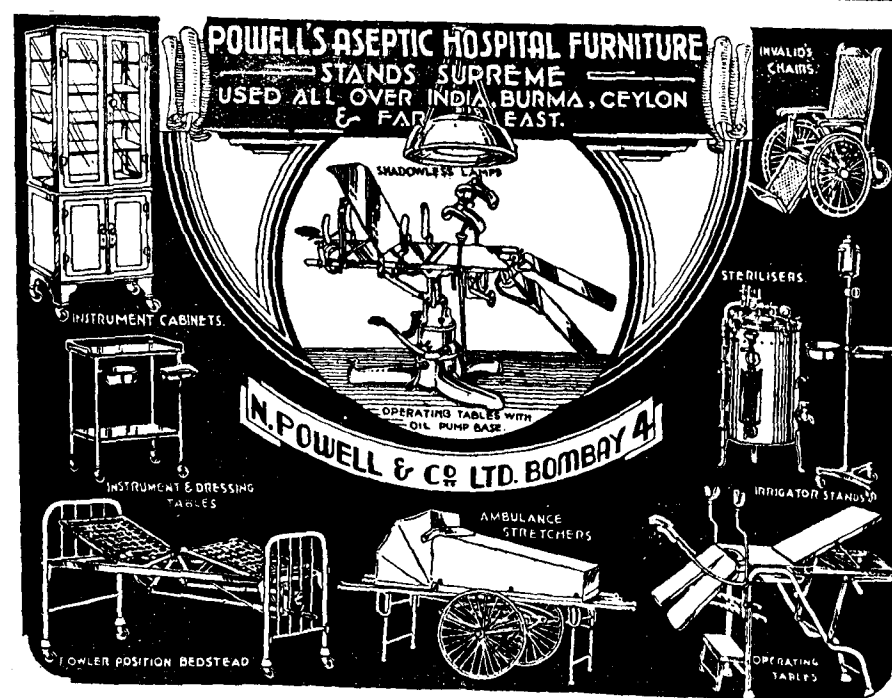
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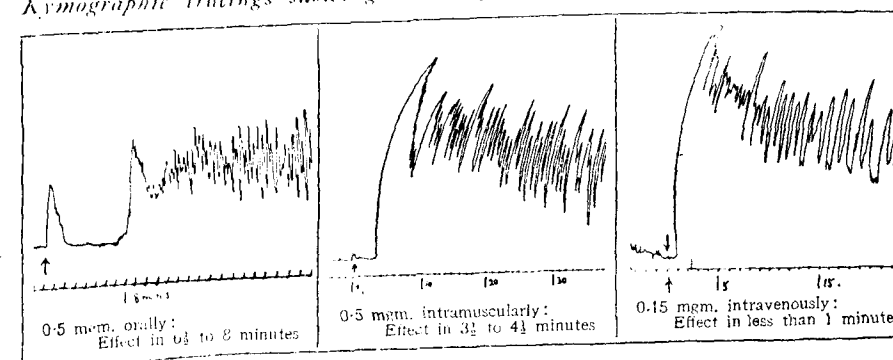
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A BRIEF LIFE-SKETCH

Lakshmanaswami Mudaliar, A., Dr. Rao Bahadur, B.A., M.D., (MAD.), F.C.O.G., (ENG.), b. 14th Oct. 1887, Educ. Madras Christian and Medical Colleges; entered Provincial Medical Service, Oct. 1909; Civil Surgeon Jan. 1920; Second Obstetric and Gynaecological Surgeon, Govt. Hospital for Women and Children, Egmore, Madras; was Hony. Secretary, Health and Baby Week (1923 to 1928), Member, Madras Medical Council, (1920-28), Member, Senate, Academic Council and Syndicate of the University of Madras since 1925; Ag. Vice-Chancellor, Madras University, Member, Senate, Board of Selection and Finance Committee, Annamalai University; President, Madras Medical Association since 1930; University Representative, Inter-Universities Conference, (1929 and 1934); Member, Pachiyappa's Trust Board, Member, All India Medical Council, visited Europe for Post Graduate studies in 1928-29; was elected Foundation Fellow of the British College of Obstetricians and Gynaecologists, England, in 1930; delivered Jubilee Memorial Lecture at Ernakulam College, Jan. 1935, Member, Social Club, Cosmopolitan Club, Madras, Kodaikanal Boat Club, Add: Madras.

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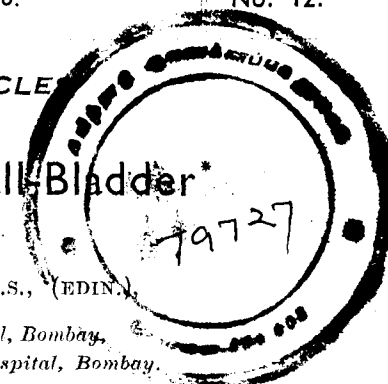
Diseases of the Gall-Bladder

BY

V. M. Kaikni, B.A., F.R.C.S., (EDIN.)

Surgeon, K. E. M. Hospital, Bombay.

Consulting Surgeon, Y. Nair Hospital, Bombay.



Pathology and Aetiology of Gall-Bladder Diseases.—Pathological conditions of the gall bladder, that have any surgical importance, are essentially intra-mural and the avenues of infection are mainly through the vascular and lymphatic system, though rarely a direct infection through the duodenum and bile ducts is possible. The disturbances in the nervous system also are many a time held responsible for the diseases of the gall-bladder. Streptococci, staphylococci, B. coli and typhoid bacilli have been found in cultures made from the bile of cholecystitis. Experimentally it has been found that when streptococci are injected into the bile no change results, but when streptococci are injected intra-murally into the gall-bladder a typical cholecystitis develops within a couple of months. Next to streptococcus, typhoid bacillus is the most common cause of cholecystitis as I have found that good many cases that come with symptoms of cholecystitis give history of an attack of typhoid.

* Specially contributed to 'The Antiseptic'.

Infection of the gall-bladder may be primary or secondary. *Primary infection* which is due to a solitary cholesterol stone is rare. *Secondary infection* is more common. It is based upon four assumed possibilities stated above *viz.*, blood stream, lymph stream, ascending infection through the duodenum and common bile duct and by the disturbances of the nervous system. A fifth possibility is supposed to be a spreading infection through the walls of the gall-bladder from an inflamed contiguous organ. The mere presence of bacteria is not enough to produce cholecystitis but the gall-bladder wall must be damaged side by side to produce the condition.

Blood Stream.—The cystic artery supplies most of the blood to the gall-bladder but there are in addition a few small branches of the hepatic artery which reach the gall-bladder through its attachment to the liver. The veins of the gall-bladder all empty into the portal vein. In the majority of cases cholecystitis represents a direct extension to the wall of the gall-bladder from a liver already inflamed. The hepatitis begins and is more marked in the interlobular and periportal tissues and it is apparently due to infection brought to the liver by the portal vein and more rarely perhaps by the hepatic artery. A pericholangitis then occurs and because of the intimate anastomosis between the lymphatics of the intrahepatic and extrahepatic biliary systems, a direct extension into the wall of the gall bladder takes place as well as into the common duct. A vicious circle sets in, the gall-bladder and liver mutually infect each other.

Thus, the infection reaches the interior of the gall bladder through the bile descending from the liver. The sequence of events will be : (i) Infection of liver cells (ii) destruction of the parenchyma —infection of bile. (iii) contact infection of the gall-bladder.

In the portal vein there are two streams, one derived from the alimentary canal and the other from the spleen. In the alimentary canal, the infection is usually derived from the appendix. Usually all these are co-existent. The organisms from the blood are arrested by the mesenteric glands and the endothelium of liver sinuses. Destruction of the organism by Kupper's cells leads to the filling of the perivascular spaces with leucocytes and finally to hepatitis.

The organism within the portal current may be derived from the spleen. The association of the diseases of the liver

and of gall stones with diseases which seem to have their origin or chief development in the spleen has recently become clearer. In haemolytic jaundice, 60% of the patients suffer from cholelithiasis with splenic anæmia, both cirrhosis of the liver and gall stones are associated. In cholelithiasis, spleen is found enlarged. It is from the spleen that the infection is derived. Splenectomy for recurrent cholelithiasis may be found necessary when the common duct and ducts of the liver within reach are filled with mud and fine stones. One of the functions of the spleen is to filter out micro-organisms and toxic substances from the blood stream and send them to the liver for destruction. It may harbour them as well as transmit them. The liver in this way receives material chiefly bilirubin and calcium upon which gall stones are deposited and such stones owe their origin to increased destruction of red cells in the spleen.

Lymph Stream.—The gall bladder is closely connected through the lymph stream with the appendix, gastro duodenal area and the liver. It is frequently found that in patients with a long history of appendicitis or duodenal ulcer, pathological condition of the gall-bladder is usually present. Naturally in the majority of these cases the infection must have travelled through a lymphatic system.

Pancreatic juice as a factor in the Ætiology of Gall-Bladder disease.—(WOLFER's theory). Embryological and anatomical evidence indicates that it is possible in the human for a continuous path-way to exist between the pancreatic and the biliary systems in a considerable percentage of cases. Since secretory pressure of the pancreas is greater than that of the biliary system in the presence of obstruction at the papilla, it is possible for pancreatic secretion to mix with bile in the common duct. The obstruction may be complete, incomplete or intermittent. There are many clinical examples proving the fact that pancreatic juice may enter the gall bladder and that associated with the phenomenon, necrosis of gall bladder may exist with or without biliary peritonitis.

Cases of acute gangrenous cholecystitis in which culture from gall bladder walls or contents were sterile, the process suggesting an acute digestion of gall-bladder wall are most probably due to this process. Experimental evidence indicates that the pancreatic juice may affect the walls of the gall bladder under variable conditions and produce changes varying from acute necrosis to chronic hyperplastic and inflammatory reactions.

With a low grade stasis in biliary passages such as may be produced by disturbed papillary function or by complete or incomplete obstruction at the duodenal end of the biliary and pancreatic ducts, the bile mixed with pancreatic juice may remain in the duct for a considerable time, the bile pancreatic ratio may be altered and variable amount of pancreatic juice may enter the gall-bladder. If the pancreatic juice content is low, and no bacterial contamination is present changes may not occur in the wall of the gall-bladder. If, however, pancreatic content is higher, the stasis prolonged and possibly a low grade bacterial contamination is present, changes may occur in the gall bladder and bile ducts.

Nervous System in Ætiology of Cholecystitis.—The filling and emptying of the gall bladder depend mainly on the closing of the Oddi's sphincter. This function is regulated by the proper co-ordination between the vagus and sympathetic nerves, so that when the gall bladder contracts, the Oddi's sphincter should relax. Any pathological condition which disturbs this co-ordination between the sympathetic and vagus nerves *e.g.*, condition of vagotonia will cause spasm of the Oddi's sphincter during the contraction of the gall-bladder, will give rise to biliary stasis which later on will lead to pathological conditions of the gall-bladder. This is analogous to vagotonia being one of the most important ætiological factors in the development of duodenal ulcer.

Cholecystitis due to Ascending Infection from the Duodenum.—Achlorhydria.—The duodenal contents are always sterile to HCl received from the stomach. When free HCl is absent the gastric germicidal barrier is removed, pylorus is relaxed and organisms escape into the duodenum, whence they may travel to the gall-bladder. Achlorhydria is responsible for lesions of the appendix which may themselves be the precursors of infection of bile. An associated relaxation of Oddi's sphincter is possible.

Ætiological Factors in the Formation of Gall Stones.—There are mainly two types of biliary calculi:—

1. *Cholesterol Stones*:—These are usually single and associated with normal gall-bladders. This is found usually in women who have had multiple pregnancies and with a large amount of cholesterol in the blood.

2. *Mixed Stones*:—These may consist of a combination of cholesterol and bile pigment in which cases they are of

various colours and faceted or they may be bilirubin calcium stones which are small in size varying from a grain of sand to a pea. They consist of bilirubin calcium mixed with mucus and rarely contain cholesterol.

Predisposing causes of Gall Stones.—1. *Presence of a nucleus.*—This is usually a mass of bile pigment, but may be blood, bacteria, mucus, foreign body etc. Pure cholesterol stones do not contain the nucleus as do the mixed stones.

2. *The stasis of bile*:—Due to sedentary habits, organic obstruction, pregnancy etc.

3. *Diet*:—The rate of secretion of bile by the liver and the rate of its flow from the biliary tract into the duodenum are generally influenced by diet; long intervals between meals and the absence of fats and other substances which stimulate the emptying of gall bladder lead to the stagnation of bile in the gall-bladder and favour physical changes and infection of the bile. So also, food rich in cholesterol helps the formation of stones. But as a rule infection of the gall plays the most important role in the formation of mixed stones. The gall bladder first receives the infection in the outer coat. As a result the activity of the viscus is first enhanced, the lymphatics are engorged and the activity of the excretory or osmotic functions of the mucosa augmented. So more cholesterol is deposited on the wall of the gall-bladder. Side by side there is lipoidal accumulation in the mucosa and subepithelial layer and formation of lipoidal papillomata. This is followed by shedding of the papillomata which form the nuclei on which cholesterol bile pigment and other secretions are deposited giving rise to the mixed stones.

Crile's theory of energy background of genesis of gall stones.

—That emotion, physical exertion—any excess transformation of energy—affect the whole energy system. That such hyperactivity of the adrenal sympathetic system affects the liver has been demonstrated by histological and bio-physical researches. A histological examination was made of every organ and tissue in animals which had been subjected to insomnia, fear and physical injury, shock, prolonged anaesthesia and infection. In every case histological changes were observed in three organs *viz.*, brain, liver and adrenals. Liver cells lost their differential stainability—they became swollen, oedematous and crenated. These experimental facts confirm the clinical decision that the changes in the bile which lead to gall stones are not due to

changes in gall bladder but to changes in the function of the liver cells.

Gall stones are less common in the lower races of man and among civilized races, they are less common among people with negative philosophy (Hindus). Gall stones occur most frequently among the active aggressive section of the human family, their incidence corresponding roughly to the distribution of hyperthyroidism, peptic ulcer, neurocirculatory asthenia, diabetes, emotion, scholastic and administrative ability.

In pregnancy, there is an increased metabolism with hypertrophy of the thyroid, of the adrenal glands; nervousness is present. Thus an extra strain is thrown on liver cells leading to the formation of gall stones.

The outstanding factors that govern the maintenance of cholesterol and pigment solution in the gall bladder and ducts are the bile salts and fatty acids. When these are present in sufficient concentration, there apparently will be no formation of gall stones.

In highly developed, high strung and emotional active people and in child bearing women, the adrenal sympathetic system is hyperactive. This hyperactivity of adrenal sympathetic system profoundly affects cells of the liver. When the liver cells are so altered they will not secrete normal quantity of bile salts and fatty acids, so gall stones are formed by the diminished concentration of the solvent bile salts and fatty acids. So, infection of gall bladder is a complication of stones. Stones are not due to typhoid as, though typhoid has disappeared from America, gall stones are still common.

Varieties of Cholecystitis.—**Acute Cholecystitis.**—The organ is reddened and oedematous. This may sometimes go on to suppuration and gangrene. There are patches of fibrin on the surface. Cases of suppurative cholecystitis are usually associated with an obstruction of the cystic duct most often by stone. Stones may be found in the gall bladder also.

Chronic Cholecystitis.—The gall bladder is thickened and its colour is greyish because of the presence of fibrous tissue. In some cases especially those associated with stones in the common duct the gall bladder may be converted into a small mass of scar tissue. The mucosa inside may be filiform or in fibrous cases it may be flattened. The bile may be thick, tarry or thin golden. The latter condition indicates advanced fibrosis of the wall and the concentrating mechanism of bile in the gall bladder

has been destroyed by severe damage to the wall. Thick tarry bile indicates less severe grade of cholecystitis.

The Strawberry Gall Bladder.—In this case, yellow specks are present on red mucosa. The entire mucosa is not necessarily involved. The yellow material is an ester of cholesterol, a lipoid, similar to that occurring in adrenal cortex and corpus luteum.

Typhoid Carriers.—Typhoid bacilli are found in gall bladder although gross changes are not found microscopically; symptoms of cholecystitis are present.

Pancreatitis as a Complication.—In case of cholecystitis especially if stones are present enlargement of the head of pancreas is found with some firmness in it. It is a case of interlobular pancreatitis with fibrosis. Loss of external secretion of pancreas may occur as also cyst formation.

The consequences on gall bladder are important. It becomes a useless organ a factor in the formation of adhesions to the neighbouring structures. In many instances the roentgenologist is unable to distinguish between the deformity of the duodenum caused by ulcer and that by adhesions.

When the function of gall bladder is lost or impaired through disease or removal, there follows dilatation of the extra-hepatic bile ducts, which apparently is caused by intermittent contraction of the sphincter of Oddi. After a time the sphincter becomes incompetent and bile flows continuously into the duodenum, but the ducts remain permanently dilated. Herein will be found the explanation of many post-operative phenomena and symptoms which at present are not understood.

The effects of cholecystitis on the liver are important. In the majority of cases the primary lesion seems to be in the gall-bladder, the liver being affected secondarily and best results are obtained by removal of the gall-bladder before the hepatic damage has become irreparable. In mild cases of cholecystitis the involvement of the liver is limited to a small area immediately adjacent to the gall-bladder. In cases of long duration, the hepatitis is more diffused and deep seated. It is especially noticeable in the anterior border of the liver which is thickened as much as 8 to 10 cm. The entire liver is sometimes enlarged, friable and has the appearance of intense congestion. Prolonged diffuse infection of the liver will eventually lead to biliary cirrhosis. The latter condition favours congestion and enlargement of spleen so that to obtain cure in the long standing cases it is

necessary to remove the spleen and gall bladder and to secure external biliary drainage by the use of a T. tube inserted in the common bile duct.

Cholecystitis and cholangitis are frequently associated lesions. Inflammatory changes in the walls of the common duct are found in every case of cholecystitis. This inflammation may extend upward and involve the smaller ducts of the liver and become a cholangitis.

The infective agent in cholecystitis is streptococcus which as is well known has a special affinity for certain tissues such as fascial planes, the joints, the heart muscles and occasionally the kidneys. The frequent presence of streptococci in the walls of the gall-bladder and gall stones is demonstrable evidence that certain systemic symptoms can be directly referable to a cholecystitis and cholelithiasis. So, some of these patients complain of attacks of rheumatism and develop painful nodules in the muscular planes, while others show myocardial symptoms, dyspnoea and palpitation on slight exertion which may later on lead to myocardial degeneration. Occasionally, symptoms of rheumatoid arthritis and of kidney trouble are found to develop in people suffering from cholecystitis for a long time. Removal of the infected gall-bladder in many cases cures such systemic diseases or at least very much relieves them, provided the damage already done is not irreparable.

Symptoms of Cholecystitis.—Acute Cholecystitis.—Onset is sudden, sometimes, with a chill. It occasionally begins during the course of other diseases, like typhoid, tonsillitis etc. Pain, rigidity, vomiting, tenderness, leucocytosis and fever are present from the beginning. Pain is continuous and aching in character. It may be cramplike if stones are present. It may be referred to the epigastrium, the right subcostal region and the angle of the scapula. Jaundice is not common unless stones are present. The centre of painful area and rigid musculature are situated high up in the region of the gall bladder. Liver dullness projects below its normal limits. On palpation an area of resistance with its lower border circular in shape is felt connected with the liver. If the pyrexia persists for many days, it indicates suppurative cholecystitis. In case the inflamed gall-bladder cannot be felt on palpation, notwithstanding the presence of typical pyrexia, pain etc., it may be assumed that inflamed gall-bladder is contracted and lies concealed under the liver and an old history of gall stones will usually be found.

Cardiac pain in Cholecystitis.—Many a time cardiac pain may be due to cholecystitis. The coronary arteries are activated by pathological gall bladder. The other theory is that there is a disturbance in the viscerosensory reflex. Irritation of the spinal nerves due to disease of the gall bladder is carried to the sensory plexus supplying the aorta, and the coronary vessels producing pain of angina pectoris. Cases have been quoted in which surgical treatment of the gall bladder has been followed by relief of cardiac pain. A study of morbid anatomy reveals the fact that in subjects with disease of gall bladder, the degree of arterial degeneration is higher than in those with normal gall-bladder. That being so, it would appear to be rational to deal thoroughly with cases of cholecystitis or gall-stones as soon as diagnosed.

WESTPHAL'S SIGN distinguishes diseases of the gall bladder and those of the stomach and duodenum. The examining physician should place the thumb of his left hand between the sterno-cleido mastoid and the scalenus anticus muscle on the patients' right and press it towards the larynx and the vertebral column with his four fingers resting on the back of the neck. If the result is positive the patient complains of acute pain which may radiate downward. Individual patients feel the same pain if they spontaneously turn their head quickly. For the sake of comparison the same test should be made on the left side also. The phenomenon should be regarded positive if it is markedly stronger on the right side. The phrenic includes sensory branches which run from the Glesson's capsule and the bile passages to coeliac and phrenic ganglia. It is therefore a case of viscerosensory pain reflex resulting from a tension of Glesson's capsule. The test is conclusive if only it is positive and diseases of the diaphragm and thoracic cavity can be excluded. Absence of the phenomenon proves nothing.

Similarly the presence of tenderness elicited by slight pressure over the right humero-clavicular joint. Vertigo and vomiting in cholecystitis is due to the irritation of the vestibular branch of vagus nerve.

Differential Diagnosis of Acute Cholecystitis.—Acute Appendicitis.—In this, the centre of painful area and of the rigid musculature is situated in the line joining the umbilicus and the anterior superior spine and below it. The patient looks more ill and toxæmic than in acute cholecystitis.

Recent Perforation of gastric or duodenal ulcer. Reflex muscular rigidity very quickly affects the whole abdomen and generalized peritonitis soon sets in.

Pancreatitis and Pancreatic Haemorrhage. The pain is rather to the left and pulse soon becomes thready and rapid.

Different Types of Acute Cholecystitis.—I. Acute oedematous Gall-bladder. Oedema of the wall is found. Recent haemorrhage or fibrosis from previous disease may be found; also vascular congestion.

2. Acute Suppurative Gall bladder. Wall has prominent inflammatory cell infiltration leading to destruction of mucosa. This is always the result of obstruction to venous return.

3. Acute Gangrenous Gall-bladder. Haemorrhagic infarct involving the wall leading to necrosis and perforation.

Chronic Cholecystitis. This is a common cause of chronic dyspepsia. A strawberry gall bladder without inflammation may produce all the symptoms of cholecystitis. The symptoms are varied. There may be recurring attacks of severe biliary colic at times followed by jaundice or only dyspeptic symptoms or those of adhesions. The progress is notoriously slow. The vagus reflex usually predominates with eructations, hyper-acidity and constipation.

Murphy's syndrome is of importance, also enlargement of the liver and gall-bladder. Jaundice is of importance only when present. The drinking of large amounts of olive oil is likely to cause the passage of pseudo calculi which are soaps formed by the action of the alkaline intestinal contents on the split-up fat contained in the olive oil. Pseudo-stones melt easily on heating.

The general symptoms may be divided into:

- I. Digestive.
- II. Local (tenderness).
- III. Pain.
- IV. Remote or focal symptoms.

I. Digestive Symptoms. General abdominal discomfort is present rather than an acute pain. There is feeling of distension and this feeling may travel upward as far as the fourth or fifth rib usually on the right side. It comes on at varying intervals after food. There is no periodicity. But the predominant feature of indigestion is flatulence. Whereas in organic diseases of the

stomach or duodenum the patient is as a rule perfectly comfortable between the attacks, this is not the case in gall-bladder disease. Particular type of food especially fatty in nature gives rise to aggravation of these symptoms. Vagus reflex may predominate with eructation, hyperacidity and constipation.

II. Tenderness.—Frequently there is definite tenderness at the tip of the 9th costal cartilage. Murphy's sign is elicited if the hand is placed deeply under the intercostal margin and the patient be asked to take a deep breath: as soon as the liver comes downwards on to the examining palm, an immediate catch in breath is noticed. Westphal's syndrome when present is of great importance.

III. Pain.—Pain, though not an important symptom in chronic cholecystitis is present in good many cases. When present it is usually of a dull stabilising type and present in the epigastrium, right hypochondrium and referred to the apex of the right scapula. In a few cases pain of a severe and acute type also may be present. In three of my cases pain of an acute type was present. In one patient, a female aged about twentyfive, severe pain was present for over a year and a half in the right hypochondrium and epigastrium. She was treated as a case of appendicitis which was later on excluded. The gall bladder was removed. There, walls of the gall bladder were not much pathological to look at except for a wart-like growth in the fundus. The pain completely disappeared for about two months, when it again started. This continued for about eight months after which the patient was completely free from pain.

The second case was that of a well-built man aged about forty, a cook by profession who used to get excruciating pain in the left hypochondrium. Duodenal and gastric-ulcer were excluded by X-ray. The gall bladder area was slightly tender. The gall bladder was removed. The patient felt much better, the pain having completely stopped for about four months. It recurred again but completely stopped after about a couple of months' treatment with belladonna alkalies. The third case is that of a young man aged about thirty. He had a gastro-jejunoscopy done for a suspected duodenal ulcer as he had an attack of severe pain with hæmatemesis. He felt complete relief from pain for about three months. Then he started getting very severe pain referred to the epigastrium with vomiting. The pain used to come on two or three times a day and was very severe. Jejunal ulcer was at first suspected. But the tender

spot was found much, to the right side a little below the gall-bladder area. Westphal's syndrome also was present. The significant thing about this case was that in the intervals between the attacks of pain when tenderness was not marked in the gall-bladder area, Westphal's syndrome used to be absent. The gall-bladder was removed and the attacks of pain completely ceased.

IV. **Focal Symptoms.** Painful joints are frequent also thyroid enlargement and asthma. It may bring on a condition of myocarditis which improves after the diseased gall bladder is removed.

Diagnosis. Murphy's and Westphal's syndromes are of importance, also enlargement of the liver and gall bladder. Jaundice is of importance only when present. It is present in cases of stone in common or hepatic duct. In obstructive jaundice bile is carried from the liver chiefly by the lymphatics and enters the thoracic duct from which it is distributed to the whole body.

Diagnosis of cholecystitis at operation are—thickening, change of colour from normal slate blue to grey or pink, adhesions and stones. Enlarged gland at the junction of the cystic and common ducts—Lund's sentinel gland—is an important sign of cholecystitis; so also evidence of hepatitis. In acute cholecystitis, liver is enlarged with round edges. In the more chronic cases one often sees hepatic fibrosis varying from scarring beneath the capsule to definite biliary cirrhosis. A significant finding in mild cholecystitis is a subcapsular fibrosis of the liver which reveals itself in a reticulated mass or in striation of white scar tissue involving the upper or sometimes the under surface of the right lobe and extending upward from the region of the gall bladder. A distended gall bladder cannot always be palpated satisfactorily and stones may be missed. Gall-bladder must never be squeezed to detect the potency of ducts as stones may be forced into the ducts, with infected bile. Collapsibility and deposit of fat on the walls of the gall bladder and adhesions joining the under surface of the neck of the gall bladder to the duodenum or other structures are important signs of cholecystitis.

Differential Diagnosis.—1. *Spastic constipation or mucous colitis.*—Sometimes resemble cholecystitis in symptoms. Moreover the pain and other symptoms resemble those of appendicitis rather than cholecystitis. Tenderness is also more marked in the lower abdomen.

2. *Intestinal allergy* or anaphylaxis especially in people with asthma or hay fever. Symptoms resembling cholecystitis occur in people by eating things for which they have super-sensitiveness.

3. *Carcinoma of hepatic flexure.*—Symptoms of intestinal obstruction are present.

4. *Diseases of the liver (chronic).*—In advanced cases ascites is present. Moreover tenderness is not confined to the whole area of the liver.

5. *Slipping rib* in which the 11th rib on the right side slips towards the next rib and thus causes attacks of pain.

6. *Gastric pain.*—The pain radiates to the left and towards the back. If due to ulcer it is increased by taking solid food. If due to hyperacidity it is relieved by food. In both cases pain comes on almost regularly at definite hours of the day or night.

7. *Duodenal Ulcer.*—Hunger pain. Periodicity is of importance.

8. *Pyelitis and Nephrolithiasis.*—Pain. Tenderness is on a spot much below the gall bladder area and renal symptoms are present.

Functional Derangements of Gall-bladder.—**Biliary Dyskinesia.**—Purely functional derangements are possible in the gall-bladder with only secondary anatomical changes. According to Westphal, hypersensitivity of the vagus causes over-rapid emptying of the gall-bladder, spasm of the ampulla of Vater and complete cessation of the bile flow. Predominant sympathetic influence leads to relaxation of the gall bladder and the ampulla of Vater and complete cessation of the bile-flow. Predominant sympathetic influence leads to relaxation of the gall-bladder and the ampulla of Vater and spasm of the relaxation of Oddi's sphincter which stops the bile flow. As for the proper functioning of the biliary system, a proper co-ordination between the vagus and the sympathetic nerves is essential. The diseases of the gall-bladder are due to constitutional and acquired factors, the disturbed nervous mechanism constituting the final path by which the causes act.

The symptoms of biliary dyskinesia tend to be similar because pain is due to distension of the biliary tract and varies in degree rather than in kind. Cases of gall stone symptoms without gall stones and cases of cholecystitis in which the gall bladder is normal at operation (hepatic neuralgia) and cases

where symptoms return after cholecystectomy are cases of biliary dyskinesia.

Spastic distension of the Gall Bladder.—This is very common and easy to cure. It is more common in women after the age of 35 and in people with broad shoulders, wide costal margin and heavy-build but no fat. The chief symptoms are dull and grinding pain lasting for many minutes at times and constant soreness. The pain is in the right upper quadrant of the abdomen. It spreads along the rib margins and becomes as severe on the left side as on the right and spreads to the angle of the right scapula. It is often related to fatigue and exposure. It may come on an hour or two after meals or in the night and may be temporarily relieved by food. Nausea is common. Occasionally vomiting occurs with relief of pain. History of flatulence, poor appetite, and loss of weight present. There may be slight icteroid tinge and bowels may be constipated or loose. The ascending colon may be hard and tender. Tongue is clean but pale and flabby. Liver is tender but Murphy's sign may not be present. Cholecystography shows only delay in emptying. Gastric HCl may be normal or increased.

The treatment is dietetic and medical. The patient should eat small, equal and regular meals free from coarse and irritating food and avoid mixture of starch and fats. Belladonna m. x given with soda bicarb gr. x and infusion of Rhubarb.

Atonic Distension of the Gall-Bladder.—The patients are a bit older than in the previous cases, slim with narrow costal angle, sloping shoulders and poor muscular development. The pain is continuous having aching sensation. It comes on soon after meals and radiates all over the epigastrium. Pain is most marked in gall-bladder area but does not radiate to the back. Patients complain of anorexia, constipation, flatulence and occasional vomiting. In contrast to the spastic type—where nausea is due to pyloro-spasm there is little nausea in this. There is tenderness in the liver area and epigastrium. Stomach is atonic and baggy. It shows delayed emptying, contains little acid and is often free from HCl. Cholecystography shows a thin, long gall-bladder which throws a poor shadow and empties only slightly.

The treatment of atonic distension is not nearly so effective as that of spastic distension. Patients should eat fruits and salads. Meals should be dry. Doughy and sodden foods should be avoided. Spirit Ammonia Co. in doses of 1 3 is useful to

stimulate gastro-intestinal mobility with oil of peppermint or menthol. For the hyperchlorhydria, acid after meals seems to stimulate the biliary system better than the alkalies before meals. In considering pathological conditions of gall-bladder it is important to realize that the gall-bladder disorder is related to disorders of the other muscular organs *viz.*, heart, stomach, colon which have a similar innervation.

The relation between the extrahepatic biliary system and other diseased organs are of interest from the point of view of both differential diagnosis and pathology of cholecystitis and cholelithiasis. The stomach both affects and is affected by gall-bladder. Gastric and duodenal ulcers may cause a reflex over-activity of the biliary system as well as of the alimentary canal. This applies to appendicitis and other organic diseases. In such cases the biliary dyskinesia is not diagnosed but treatment of the primary cause cures the reflex disorder.

Cholecystitis may lead to hypertrophy of the ampulla muscle and asthma has been said to be associated with spasm of the ampulla. During pregnancy and menstrual period there is excessive irritation of the biliary apparatus and often leads to some degree of spastic distension.

Differential Diagnosis between the Pain of Gall-Bladder Disease and Disease of the Heart.—Careful consideration of the history of the pain is essential. It is important to know especially whether the pain comes on suddenly during exertion like angina or gradually after exercise like the pain of biliary dyskinesia. Residual tenderness lasts for hours after an attack of angina and for days after gall-bladder disease. However, true cardiac disorders like extrasystoles, sinus arrhythmia and auricular fibrillation are caused by cholecystitis. So also, vagal reflex which causes a sudden alteration in the pressure of the gall-bladder is found to cause an extra-systole and bradycardia—which can be abolished by atropine or section of the vagus experimentally.

A rhinopharyngeal syndrome of dryness of the pharynx, dry cough, dysphagia is many a time associated with pathological condition of biliary tract. Cases have been reported where a patient with spastic distension of the gall bladder had all the symptoms of tuberculosis of larynx and was treated for it for a long time.

Mental and physical stresses, irregular and hurried meals and other irregular types of overstimulation seem to favour spastic distension of gall bladder and also too much of fat and starch and of very cold and very hot drinks at meals.

Anomalies of Gall-Bladder.—Cases of congenital absence of gall-bladder as well as doubling of gall-bladder are sometimes found. Gall-bladder is found to carry accessory bladders or pouches or it may be bilobed. Cystic duct may be absent or doubled. Similar anomalies may be found with the common bile duct.

Multiple hepatic ducts are encountered and so-called cyst hepatic ducts. The latter are potential sources of post-operative bile leakage. They drain from the liver into the side of the gall-bladder or into the cystic duct. They are too small to be detected during operation.

In one case with a shrunken fibrosed gall-bladder, a fairly big branch of the hepatic artery was found to be coursing along the gall bladder firmly fixed to the fundus and terminating in the right lobe of the liver. It had to be ligatured and cut before removing the gall-bladder.

Tumours of Gall-Bladder.—Benign Tumours are rare. Papilloma may occur in straw berry gall bladder. Cystic adenoma is sometimes found.

Carcinoma.—Primary carcinoma of gall bladder is more common than is supposed. It has a definite relationship to biliary calculi, about 4 to 14% get it. It may be papillary, gelatinous or infiltrating type. Very persistent jaundice and evidence of fistulous tracks with other organs are proofs of the existence of carcinoma of gall bladder. Sarcoma is rare. In one case at operation a gelatinous type of carcinoma of the gall bladder with adhesions to the stomach was found without the presence of jaundice.

Rarely torsion of gall-bladder has been found to occur when a mesentery is present.

Perforation of Gall-Bladder in Acute Cholecystitis.—Perforation of gall-bladder is unusual. The condition is pre-operatively confused with inflammation in a high lying appendix, perforation of stomach and duodenal ulcer or acute pulmonary disease. The gall-bladder rarely perforates during the first attack. Consequently adhesions form and when perforation does occur, the process usually remains localized about the viscus. Perforation with material running freely into the peritoneal cavity is rare and when it does occur accurate pre-operative diagnosis is difficult. Thick oedematous wall may give the appearance of distension but in reality gall-bladder rarely bursts from over-expansion. Perforation is probably always due to ulceration or local gangrene of a part of the wall. Perforation is more common in old people as the blood supply of the organ is poorer with advancing years.

(To be continued.)

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3rd week	—	2 ccs	2 ccs	—
4th week	5 ccs	—	—	—
5th week	—	2 ccs	2 ccs	2 ccs
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BY

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Recent progresses in therapeutics.—Substitution therapy (*e.g.* insulin therapy, liver therapy and other endocrine therapy), chemotherapy (*e.g.* treatment with organic arsenicals, pentavalent antimony compounds, atebirin, plasmoquin, sulphonamide, and other synthetic drugs), and vitamin therapy comprise the greater bulk of recent development in therapeutics. The older therapeutic knowledge is an outcome of observations based on empirical uses of drugs to cure maladies; while the recent therapeutics is based on a knowledge of synthetic chemistry, biochemistry and modern pharmacology (applied pharmacology). The latter has influenced a great change over the former. The pharmacologists now endeavour to put the empirical therapy on more rational principles. In the eighteenth century digitalis was introduced in therapeutics from folk-lore remedies. In modern times, a scientific knowledge of its mode of action has been worked out in greater details. Its cumulative properties have been well understood. The recent knowledge of the drug has brought important regulations about its use: an intensive course is required at the beginning of the treatment to digitalise the patient in a short space of time and then a maintenance dose is to be continued to maintain the action of the drug and avoid the cumulative toxic symptoms. This regulation is based on the observation that the body destroys in a day about as much of the active principles as are contained in 1 c.c. of tincture digitalis. Hence, if 3 c.c. of tincture are given daily, increasing effects are produced every day and when the desired intensity of effect has been attained, it is necessary to reduce the daily dose to a maintenance dose.

Pure pharmacological achievements, a few years back, were received with great applause, but pharmacological achievements applied and proved worthy of clinical use are now looked forward to with greater interest. The study of drugs acting on autonomic nervous system (*e.g.* adrenalin, ephedrine, benzedrine, acetyl-choline, doryl, mecholol, physostigmin and prostrigmin), has opened a newer avenue, where mode of action of drugs based on physiological principles, has provided fresh food to the mind

* Specially contributed to "The Antiseptic"

of the pharmacologist and scientific-minded clinicians. Recent investigations in this branch of pharmacology have put the hormonal transmission of nerve impulses on a firm basis; while preparations of stable and less toxic drugs of this group have placed very potent drugs in the hands of scientific clinicians. Therapeutic results of these drugs have changed the older conceptions of the pathology of some diseases like myasthenia gravis and amyotrophic lateral sclerosis. The developments of the science of therapeutics of recent days show that in order to understand the effects produced by remedies on the functions of the diseased body it is necessary to know about the normal functions of the body (physiology), and also something of the manner in which these functions are deranged by disease (pathology of function).

It may thus be said that the recent therapeutics is a texture interwoven with the fabrics derived from physiology, synthetic organic chemistry, pathology and modern pharmacology (applied pharmacology).

Present-day therapeutics—The human mind changes very little, and to-day as in previous centuries, there is a constant tendency to seek relief from the doubts and difficulties of rational methods by a blind acceptance of authority. Furthermore, there is the fact that the first step in successful treatment is the acquirement of full confidence of the patient and procedures flavoured with a suggestion of magic are the easiest methods of impressing patients. These appear to be some of the reasons why therapeutics to-day still conserves so many mediaeval methods and trappings. This aspect of therapeutics whilst of interest to the psychologist and student of folk-lore, is of no scientific interest (*Clark, 1937).

Advancement of therapeutics was very slow during the early years of the twentieth century. This is well illustrated by the fact that the early editions of Osler's 'Principles of Medicine' dealt most exclusively with the morbid anatomy and diagnosis of disease and less than 10 per cent. of the space was given to treatment. This attitude unfortunately led to the attention of physicians being focussed on the post-mortem room rather than the ward, and the term "a complete case", which was commonly in use, indicated that the latter was regarded as the ante-room of the former. The science of therapeutics has made remarkable advances during the past quarter-century. This has deprived therapeutic nihilism of any rational basis. The tradition still

* Clark's Applied Pharmacology 1937 Edition

persists, however, amongst those who acquired fixed ideas in the first decade of this century and who have not been influenced by subsequent progress. (*Clark, 1937).

In this country such medical men outnumber scientific-minded ones. The most unfortunate thing here is that such persons are generally at the helm of medical affairs. Perpetuation of "superiority complex" in the Indian medical world—, (which has a parallel psychology in the existing Hindu caste system)—during this era of scientific awakening is an outstanding example to support such contention.

Present-day therapeutics in India.—In this country, therapeutics is still mostly on empirical basis. The reasons are obvious for such a state of affairs. A greater percentage of the therapeutists or clinicians is very conservative and blind follower of authority. Some still think that medicine comprises diagnosis and diagnosis. With some, non-scientific indigenous and folk-lore remedies and official preparations find very little distinction. They very often prescribe a blend of these remedies for which no scientific explanation is possible. In teaching institutions bed-side clinics seldom includes teaching of rational therapeutics. Sometimes there is no mention about the treatment of the case at all.

There is no law in the country to control spurious drugs. Indian market is the dumping ground for such stuffs and unscientific medicines about which very bold curative assertions are made in the advertisements. The medical graduate finds it difficult to choose between a scientific patent medicine and a 'secret remedy'. Praise of indigenous and folk-lore remedies through different sources attracts his attention and he forgets to weigh these things in a scientific manner. Blind faith supervenes; he looks for the 'authority' and finds that his teachers used to prescribe such remedies. A vicious circle is formed. He loses his power of judgment or probably he has not developed in him the training for judging between scientific patent medicines and 'secret remedies' and he develops chivalrous spirit for indigenous remedies, at the back of which are blind faith and authority and no scientific arguments.

Another very baffling condition is the recognition of the scientific and pseudo-scientific systems of medicines by the Government in the same breath. Then again, there are members of the State who always prefer to be treated by the scientific

* Clark's Applied Pharmacology, 1937 Edition.

method and, yet, are never inclined to decry the other non-scientific systems. With some governments the monetary value of a medical graduate and a licensee, vaidya, hakim and homeopath finds very little distinction. This may be quite all right from economic points of view but it has a very bad psychological bearing on both the medical graduate and the people he has to deal with. In rural areas the worth of such professional members is judged not so much by the fact of his possessing a scientific knowledge of the remedial measures but rather by his monetary value fixed by the government.

In conclusion, it may be said that there are too many discrepancies and in order to bring the level of therapeutics to the modern scientific standard in this country, it is necessary that the existing teaching of empirical therapeutics is replaced by rational therapeutics. Modern therapeutics is an inductive science based on observations, it has nothing in common with any of the past or present systems of medicine based on authority. It has a very intimate relation with the modern pharmacology and could never be divorced from it.

Modern Pharmacology.—Modern pharmacology is a scientific blend of organic (synthetic and structural) chemistry, biochemistry, and animal and clinical experiments. It is not always possible to apply the knowledge derived from animal experiments to the human cases. Sometimes, the pharmacological actions vary very widely in these two cases. Knowledge obtained from the application of experimental results upon human cases is of very great importance to the students of medicine. On possession of such knowledge he is prepared to follow the rationale of modern therapeutics far more intelligently. Students trained on this line very seldom find satisfaction by mere mention of empirical uses of drugs uttered in a medical ward or in a consultation room. In the present days, the general trend of the pharmacologists is to expect rational application of the action of drugs on human cases from the medical students. Imparting of this type of knowledge requires a very close and correlated teaching of pharmacology and therapeutics. This kind of teaching is of immense importance especially in the Indian institutions, where other indigenous systems of treatment based purely on empirical line are widely prevalent. It is very surprising to find some of our physicians prescribing occasionally peculiar blend of indigenous and official drugs; probably the reason is that they attach equal empirical value to both. Such empiricism

is an outcome of faith which is not based on rational method but shows a blind acceptance of authority.

The discoveries of the chemistry of the vitamins and endocrine products and their synthetic preparations are indeed very wonderful achievements in the line of recent biochemistry. These preparations have allowed greater facilities to the pharmacologists in studying the action of these biochemical products. Observations made side by side on the laboratory animals and clinical cases have thrown flood of light on the mode of action of hormones and preventive medicine. Endocrinology has gradually revealed a system by means of which all the functions of the body are regulated by drugs synthesised therein. The discovery of insulin and the liver treatment of pernicious anemia have provided remedies for diseases which were previously considered incurable. The discovery of vitamins is an advance of even greater practical importance than the discovery of endocrine secretions, for it shows a means of preventing and curing some of the commonest diseases that afflict mankind. A new field of preventive medicine has been opened up, and already rickets has joined scurvy in the class of easily preventable diseases. The discovery of vitamins has also widened our outlook regarding the prevention of infectious diseases, for the spread of these diseases depends upon two factors— the distribution and virulence of the organism and the resistance of the population. Preventive medicine hitherto has concerned itself chiefly with the prevention of the spread of organisms, but it now appears probable that much may be done by correct dieting to raise the resistance of the population.

Dietetics, therefore, forms a component part of modern pharmacology and therapeutics. It is prescribed for preventive as well curative purposes. Rendering the urine alkaline or acid may be done by keeping a patient on lacto-vegetarian diet or by administering proper medicines or by a combination of both. High carbohydrate and low fat diet has anti-ketogenic properties, while high fat diet is used to produce ketosis and acid urine. Knowledge of modern dietetics is essential for the therapist. Diet is to be prescribed not for its calorific value alone but to meet the daily requirements of other essential factors, like minerals and vitamins. Rapid destruction of certain vitamin during diseased conditions demands its regular supply which may be met by regulating the diet or administering some vitamin preparations. Avitaminosis is a very rare condition these days but hypovitaminosis of different degree is not very infrequently met with.

This has increased the limits of vitamin therapy extensively in present days.

Conclusions.—In the recent days rational therapeutics is progressing with a rapid stride and is being recognised as a specialised subject. In order to develop scientific therapeutics (contrary to the empirical therapy based on tradition and authority) in this country, the medical students are to be taught the modern rationale of therapeutics. Only scientific-minded clinicians can explain these rationales and only such persons should be entrusted with the task. Empirical utterances on the use of remedies is detrimental to the present science of medicine.

The present day medical graduate on leaving the University (even those who have gained some experience in empirical methods of treatment during their stay at the hospital in the capacity of a house-staff), is faced with complicated problems at least in respect to selection of drugs. His daily mail brings nicely illustrated pamphlets on proprietary remedies with bolder assertion in favour of curative efficacies which are followed by packets of physician's samples. He blindly picks up some for his clinical trial without caring to know the actual constituents of the remedy. He has no knowledge to discriminate between a scientific proprietary preparation and a 'secret remedy'. On another occasion he is tempted to use unscientific indigenous and folk-lore medicines for which he finds no rational scientific explanation but tradition and authority. This leads him to forget the official remedies and when he tries to write a prescription he finds great difficulty in selecting the proper drugs.

In present days diagnosis does stand first, but not second, nor third; preventive medicine and remedial measures have advanced to a greater perfection and their science and utility are in no way inferior to those of diagnosis.

Treatment of Acute Diarrhoea in Infants and Children in the Tropics*

BY

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DIARRHOEA itself is not a disease as a separate entity but a symptom indicating the upset of the intestinal canal, both small and large due to the following causes:—

1. Over-feeding—in infants and children.
2. Presence of Bacterial flora in the bowel which though normally present become super-active spontaneously.
3. Presence of undigested food stuff.

It has also been my clinical observation that it is always accompanied by some form of gastritis. It is the commonest and most troublesome manifestation of bowel disease both in infants and children in the Tropics. More marked in the summer months and the greatest scourge claiming a very high percentage of mortality. Therefore, it should always be taken very seriously and treated carefully. In this article, I shall try to deal with the subject from the point of view of Medical Practitioner to whom indoor help of the hospital is not available.

Before starting the treatment of a case, every medical practitioner should try his best to understand the type and the causes in a particular case. Failure to do this will bring discredit to him. To solve this difficulty, a classification should be established. It is very difficult to classify Diarrhoea, because, it cannot be definitely marked off, into different classes. The different varieties pass into one another. A case which starts as a simple one may become Febrile and from that may become choleraic just as it may be choleraic from the first or may begin with Febrile, or on the other hand it may remain simple through. A case cannot always be referred exactly to one or other of the classes. Personally, I stick to the following scheme of classification which seems to be very simple both from clinical and treatment points of view.

PRIMARY CASES: 1. Acute. (a) Non-Infective and Dyspeptic or Dietetic. (b) Infective—Summer Diarrhoea, Cholera Infantum.

* Specially contributed to 'The Antiseptic'.

SECONDARY CASES: 1. Parenteral Diarrhoea. 2. Chronic Diarrhoea.

Dyspeptic or Dietetic Diarrhoea.—In mother-fed infants it is almost always free from infection, because mother's milk is almost sterile unless the nipples are infected. Dirty nipples are also very common cause giving rise to Diarrhoea which becomes infectious and takes a serious turn. This form of Diarrhoea usually occurs in artificially-fed babies.

This condition in majority of infants is due to dietetic errors, either in quantity or in quality. The fault may lie in various directions.

Feeding the infants or children too often either on breast or on bottle or otherwise increases the total amount of food per day, so that the digestive capacity is over-taxed and sooner or later breaks down. In this category, I presume that the artificial food is of desired composition suitable to the stomach digestion. If such over-feeding continues, the digestive capacity breaks down and the stools become very frequent, loose and slightly offensive. The weight of the child which has been rising quickly in the beginning is now checked or falls with the development of diarrhoea and unless treatment is promptly adopted, the infant may in the end become considerably wasted.

Treatment of such a case is always a protracted affair for it is not merely necessary to reduce the frequency of feed but the digestion has also to be nursed back into a healthy condition. In the majority of cases, "Feeding the baby by the clock" will correct the error. Night feeds as far as possible should be avoided. If the child is awake, then a little boiled water may be given. In the case of a breast-fed infant or child, the breast should be withheld for 12—24 hrs at least and in that of an artificially fed child cow's milk should be stopped altogether. Glucose water might be given by mouth.

Quality of Feed.—Due to excess of fat in the feed or due to its faulty composition in cases of artificially fed children, sometimes, a troublesome diarrhoea follows owing to the presence in the intestine of irritating soaps and fatty acids.

In such cases, the amount of fat in the diet should be cut down and an initial dose of castor oil should be given to clear the intestine of irritating soaps and fatty acid and then the following mixture should be given every four hours until the stools begin to resume their normal colour:—

℞ Ol. Ricini	...	℥	v.
Mucilage acacia	...	q.	s.
Aqua Mentha pip ad	...	℥	i.

To a child of 1—2 years of age.

As soon as the stool attains its normal yellow colour, this must be stopped and the following one to be given:—

℞ Bismuth Carbonas	...	gr.	v.
Calcium Carbonas	...	gr.	7½.
Tr. Catechu	...	℥	v.
Spts. Chloroform	...	℥	ii.
Aqua ad	...	℥	i.

To a child of 1—2 years of age every four hrs.

During the course of illness it is better to give plain boiled water cooled down, albumen water or very weak tea sweetened with saccharin frequently; 2—3 drops of Brandy to each two ounces of fluid given will be found very useful, if there is much restlessness or pain. When deciding the composition of new diet it is wise to begin with a weaker food than might at first seem to be required. As a rule it is better to weaken the strength of feed than to reduce its bulk, for, infants who have been over-fed will become dissatisfied and irritated if the size of the meals is reduced although they will tolerate a reduction in strength. The reduction in diet can be more easily carried out by giving half an ounce of boiled water at the beginning of each feed.

Carbohydrate Indigestion gives rise to a diarrhoea which is found in bulky children. In this case also the treatment should be started with a tea-spoonful dose of Ol. Ricini. The amount of carbohydrate in the diet must be reduced and if starch has been given, it must be entirely withheld. A simple mixture of milk and water will be found most satisfactory. In such cases, glucose water, if given, as in other cases, will aggravate the condition and no medicine is going to do any good. Dextrose which is a less fermentable sugar must be given. If equal parts of milk and water are given, a tea-spoonful of dextrose should be added to every four ounces of the mixture. Prolonged feeding on a low sugar diet is likely to lead to constipation and although the drugs are only of secondary importance a combination of chloral and castor oil in small doses at the beginning of treatment is useful to check the diarrhoea and rest the infant.

℞ Chloral Hydras ... gr. i.
 Ol. Ricini ... gr. 1½.
 Mucilage acacia ... q. s.
 Aqua ad ... 3 i.

Thrice a day.

Lienteric Diarrhœa.—is due to an exaggerated reflex irritability of the colon; the child feels a desire for defecation immediately after taking food, so that the child may have to rest for a while to relieve himself.

Treatment. In such cases Tr. Opii added to the Carminative mixture or to alkaline gentian mixture before meals lessens the nervous irritability and checks the condition. When there is improvement it should be stopped. Dover's powder is also of great use.

Treatment of Infective Diarrhœa. Under this, I will describe the treatment of both the summer diarrhœa and Cholera Infantum because both merge into each other and the principles and the line of treatment are common to both.

Although certain guiding principles can be laid down for the management of Infantile Diarrhœa, each case requires separate consideration. It is seldom possible to plan a course of action to cover more than a few hours because the condition of the infants may undergo such rapid alteration and the Doctor must be prepared to adjust his treatment accordingly. It is the good management and nursing which is of the utmost importance in the treatment of this condition. Drugs are of secondary importance. The child must be treated as a whole and all attention must not be focussed on the frequency of stools. Frequent observations of the infant's progress are essential.

Apart from treating the symptoms as they arise which I shall mention under symptomatic treatment, the following line of action is to be followed which is applicable to both the conditions:—

- (1) Absolute Rest to the patient.
- (2) Elimination.
- (3) Starvation.
- (4) Early replacement of the lost fluid so as to prevent a serious dehydration.
- (5) Control of vomiting so that fluid may be taken by mouth.
- (6) Stimulation—By applying warmth, and lastly
- (7) Drugs.

Now, I shall deal in some detail with each of the above points separately:—

Rest.—The rest is needed both for the body and the bowels of the infants. By ensuring rest, we avoid exhaustion of the patient.

Elimination.—In cases where diarrhœa is due to the presence of irritating material in the intestinal canal itself, whatever be its nature, the peristalsis is increased below the point where it is situated; thus, the resulting diarrhœa tends to exhaust the patient without in any way contributing to the removal of the cause. In such cases which constitute the majority with which we have to deal, an efficient evacuant which will act in the intestine far above the site of irritation should be given at once. It is necessary to dwell upon this, because, I have seen that it is so often treated by all sorts of astringents without any preliminary evacuation, a procedure which is as unscientific as it is useless. In India, many ladies are in the habit of giving opium to check this condition which in the long run upsets the digestion of the infants and shatters his health and spoils his mental faculties. To neglect the evacuant is therefore to do wrong both scientifically and practically. The effect of so doing is to prolong the sufferings of the patient and thereby bring discredit to the physicians.

When severe diarrhœa has been present for several days and the infant is both exhausted and dehydrated we can safely omit the step of elimination as it may tax the infant's strength unduly.

Evacuants.—Castor oil is the purgative of choice in such cases, because it sweeps away the intestinal canal of the irritating material and has got the best constipative effect. It may be given at the rate of ½ teaspoonful for a six-months-old infant and one tea-spoonful for an one year old child.

Sometimes, owing to the gastric irritation, children are unable to retain it, then, we ought to give it in the form of an emulsion as I have mentioned above or give the following saline mixture.

℞ Sodii Sulph. ... gr. x.
 Sodii Citras ... gr. v.
 Glycerine ... ℥ xv.
 Aqua ad ... 3 ii.

To be given every 2 hrs. and 3—4 doses, according to the response.

By this saline mixture—much of the toxic material and bacteria are eliminated and when the condition of the stools comes to be of normal colour it should be discontinued and astringents given.

Astringents.—In most cases after a single preliminary dose of castor oil, if it is continued in minim doses, the Diarrhoea stops due to removal of the irritating material and its constipating effect. But, some cases linger on and to them we give either of the following mixtures.

℞ Bismuth Carbonas ... gr. x.
Sodii Bicarb ... gr. ii.
Pulv. Creta Arom ... gr. v.
Mucilage ... q. s.
Aqua Chloroform ... ʒ i.
Sig. Three times a day.

Or

℞ Acid Hydrochlor Dil ... m i.
Glycerine Pepsin ... m v.
Spt. Chloroform ... m i.
Aqua Anæthi ad ... ʒ i.
Sig. T. D. S.

Starvation.—At the beginning of treatment a preliminary period of starvation has a beneficial effect by resting the bowel. The period for which food is withheld varies in a mild case from 12 hrs. to 48 hrs. in severe cases. During this period milk must be withheld completely for there is reason to believe that milk in such cases is actually poisonous.

Diet.—During the period of starvation, the diet should be such as will leave very small residue or no residue at all in the Intestine and should not be allowed to form a media for the growth of Bacteria.

Pure water boiled and cooled, barley water, whey, and lime juice are to be given too often to supply the needs of the infants.

Replacement of loss of fluid.—During the period of starvation which lasts from 24 to 34 hours replacement should be made through:—(1) Oral Route, (2) Rectal, and (3) Subcutaneous.

1. *Oral Route.*—In all cases, we must first try to administer fluid by this route.

(a) Plain boiled water may be given by mouth in a bottle practically continuously if the child will suck it, otherwise in a teaspoon.

(b) 5% Glucose in water so that an ounce or more is given every hour.

(c) Albumen water oz. i or more every hour.

(d) Weak Normal Saline ($\frac{1}{2}$ teaspoonful of salt to the pint of water) may be given by the mouth.

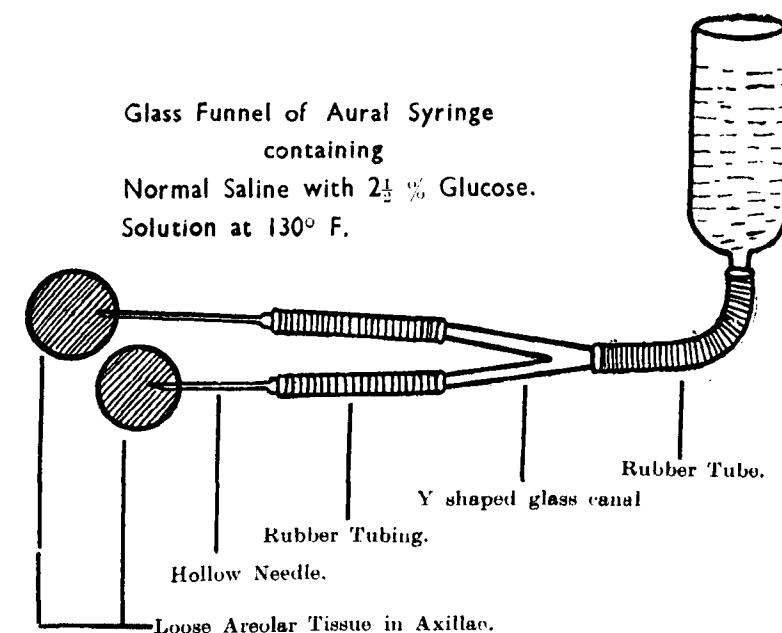
(e) Weak Tea :—It is a stimulant as well as an astringent.

(f) Barley water.

If the loss of body fluid cannot be replaced by this route we must try either subcutaneous or Rectal Route.

Subcutaneous.—Injection of normal saline as described here has proved both the easiest and the simplest to carry out in private practice.

ROUGH SKETCH OF CONTINUOUS SUBCUTANEOUS SALINE APPARATUS



1. Complete Sterilization of the Apparatus required.
2. The Barrel of the Aural Syringe should be 12" above the Child's bed.

Articles required:—1. Normal saline to which 2½% Glucose water has been added.

2. The apparatus as sketched here.

Precaution:—1. Complete sterilization of the apparatus is essential.

2. All the air must be excluded from the apparatus.
3. The fluid is allowed to run slowly by Gravitation.
4. Oz. iii—vi being run slowly on each side is the usual practice.

The amount required will depend upon the size of the infant and the speed with which the saline is being accepted by the infant. As a rule the absorption is rapid and the above amount is taken up in 1 hr. This should be repeated once or twice a day until the infant is able to retain fluid by mouth.

The injection may be repeated at different places and at different times.

Uses of Saline Administration.—1. To replace the loss of fluid.

2. Accelerate Circulation.
3. To eliminate the toxins through the kidneys.

There may be considerable loss of water from the body without much alteration in the water contents of the tissues. Moreover there is a clear evidence of loss of water from the plasma as indicated and a considerable rise in the serum protein and of an accumulation of waste product. Administration of fluid diminishes the concentration of the blood and thus by lessening its viscosity eases the circulation and promotes renal activity. This and the increased interchange between intra-vascular and extra-vascular fluids facilitate evacuation of waste products, the accumulation of which almost inevitably leads to acidosis and ketosis.

Rectal Route:—This is not so useful though much easier as, due to the large number of stools, the whole fluid is rejected. But attempts should be made so that some of it might be absorbed. The rectum should be washed first and then the nutrient enema given.

Normal Saline with 5% glucose may be given per rectum by means of a common Drip Enema.

Special Symptoms Associated with this and their Treatment.—1. *Hyperpyrexia* (Temperature over 104):—Ice bag near the head, sponging, or we can add Liq. Am. Acetas in the castor oil emulsion.

2. *Collapse*:—Hot water bottle; cover the child with blankets. Spt. vini gallici m. v every 2 hours in one tea-spoonful of water. Adrenalin m. ii every four hour hypodermically—or $\frac{1}{4}$ m. of Liq. strychnine upto 3 months of age and $\frac{1}{2}$ minim upto 12 months.

3. *Irritation round the Anus*:—External irritation of the pain round the anus may be prevented by washing with a dilute solution of sodium bicarbonate (teaspoonful to a pint of water) and smearing the part by an application of zinc oxide gr. xx to castor oil one ounce. The application is renewed every time the bowels are opened.

4. *Thrush in the mouth*:—Small white patches adhering to the cheek and first resembling little particle of milk. It may also be an agent responsible for Diarrhoea. It should frequently be cleaned with Boroglycerine.

5. *Restlessness* for which Chloral is the best Drug.

Indications and Contra-Indications of Opium in this condition.—Much harm can be done by the wrong use of the drug which if used properly is indispensable and very useful.

INDICATIONS.	CONTRA-INDICATIONS.
1. In cases in which lower part of the large bowel is involved such as colitis, where the stools are frequent and there is much straining.	1. Never give it at onset of the illness as it will prevent the evacuation of intestines and toxic materials.
2. If the stools are offensive and the tongue clean, it shows that the peristalsis only is increased. Opium in such cases calm down the peristalsis and so prevents putrefaction and diarrhoea.	2. Never give it if there are signs of collapse.
3. Lienteric Diarrhoea as mentioned above.	3. Never give it when the tongue is furred.

A. Never wake a child up to give a dose of opium.
B. It should never be given in a meal but added in each dose separately as needed.

Convalescence.—After this severe illness, the child's general health is much reduced and steps must be taken forthwith to restore it. There is a tendency to constipation, which must be treated with cream of magnesia and liq. paraffin.

The digestion is impaired and feeding must be guarded with the greatest caution, since gastric acidity is already low in children Lactic acid, skimmed milk (Lacidac) is very useful,

Preparation :—

Skimmed boiled milk	... 1 Pint.
Boiled water	... 1½ Pint.
B. P. Lactic Acid	... m 60.

which is added drop by drop. It should not be heated above body temperature or it will curdle. Sugar in the form of Dextrimaltose can be added as required.

1st Feed— $\frac{3}{4}$ l— $\frac{3}{4}$ l and very diluted and addition of quantity and strength must be made very gradually.

Ordinary cow's milk is best avoided for some time and all addition of fat to the diet such as cream or cod liver oil must be prohibited.

For Anaemia, we can prescribe Syr. Ferri Iodide m. xx Ext. of Malt 3—two teaspoonful twice daily after meal.

Vitamins A & D. can be given in concentrated form.

Parenteral Diarrhoea, is secondary to some condition outside the gastro-intestinal canal. It is often a sharp illness and unless the possibility of infection in some other part of the body is constantly in mind it is very easy to overlook its secondary nature. The diarrhoea should always be treated along with the primary condition, otherwise the treatment will be a failure.

Primary conditions :—

1. Acute Catarrhal infection of the Respiratory tract.
2. Acute otitis media.
3. Fleeting attacks of diarrhoea with the eruption of each tooth.
4. Mastoid Diseases.
5. Meningococcal meningitis.

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**"THE DIET THROUGHOUT INDIA IS
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THOROUGHLY UNBALANCED DIET"**

SURIE (Indian Journal of Medical Research,
January, 1936, page 763)

Supplement the diet with Adexolin

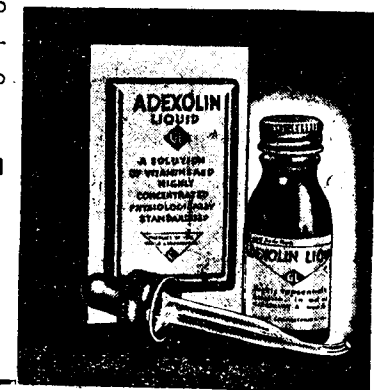
In the same issue of the Indian Journal of Medical Research (page 741), Aykroyd and Wishan suggest at least 3,000 to 5,000 international units of vitamin A as the desirable daily intake. The requisite dose is provided by $\frac{1}{4}$ - $\frac{1}{2}$ cc. of Adexolin Liquid daily, or one Adexolin Capsule every day or every other day.

The ordinary diet in India, according to a paper by Surie (Indian Journal of Medical Research, January, 1936, page 763), combines so many faults that it could be used as a "basal diet" in investigating problems of human malnutrition. In this paper, the Indian diet is shown to be grossly lacking in vitamin A. The cereal diet used throughout India is also gravely deficient in vitamin D. Much stunted growth, general ill-health, and susceptibility to infections could be prevented if steps were taken to remedy these deficiencies.

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Some Recent Views on the Gonococcus and Gonococcal Infections*

BY

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Venereal Specialist, Govt. General Hospital, Madras.

AND

R. Balachandran Tampi, M.B., B.S.

PART II.

(Continued from Pp. 1015 Vol. 35, No. 11, Nov '33 issue of 'The Antiseptic'.)

NEW ideas in the Pathology of both male and female gonococcal infections are not numerous. Such studies have been mostly confined to the cytology in the infiltrations and exudates. According to Saigrajeff the exudate in acute gonorrhœa in the early stages is practically devoid of eosinophile cells but tend to appear as the posterior urethra is invaded.

More attention is drawn to the importance of the "bulbar gland" of Cowper. We are indebted to A.H. Harkness (1937) for the recent studies on this subject. His experience goes to show that about 16% of cases suffer from chronic infection of Cowper's glands. Of the two anatomical portions of the gland the bulbar gland is mostly the infective focus than the "diaphragmatic lobe". This author lays emphasis on the importance of Cowperitis in cases of relapse, metastatic complications, persistent gleet etc., where the prostate and seminal vesicles are often wrongly blamed. So it is worth while to include a proper palpation of the Cowper's glands in the routine examination of cases. Storer however, is of opinion that the prostate is always infected in acute gonorrhœa unless appropriate treatment of urethritis is instituted within 36 hours of onset. Spread of infection is considered to be probably by way of the lymphatics. He even states that "a urethritis which clears up completely within two weeks without infection of the prostate or Littriss' glands is almost certainly of non-specific origin". The pathology of infection of epididymis is still shrouded in theories. Each theory has its own merits and demerits. The theory of Pelouze that epididymitis in the male and salpingitis in the female are caused by

* Specially contributed to 'The Antiseptic'.

the mechanical transference of the infection from a posterior urethra in the male and cervix in the latter deserves more extended and careful study. According to this theory sudden increase of the intraurethral or intravesicular pressure in the male suffering from posterior urethritis causes epididymitis and increase of intra-uterine pressure caused by violent contraction causes salpingitis.

The tendency among many workers till recently in the diagnosis of gonorrhœa was to rely entirely on the examination of the smear alone. Perhaps this is the only available method within the reach of all. The relative merits of this and other recent laboratory methods as culture, complement fixation tests etc., have been the subject of discussion recently. On the basis of the vast amount of literature on the subject one may safely say that smear examination alone is not sufficient to warrant a diagnosis of "gonorrhœa". Cultural diagnosis has to be resorted to in cases where other methods have failed or yield inconclusive results. A positive culture is a definite diagnostic point. Gory and Janbert prefer spermocultures in the case of male in the diagnosis of chronic gonococcal infections while Price and King obtained satisfactory results by the culture of the secretions obtained by prostatic massage. Leathby and Carpenter summarised their comparative study on cultural and smear diagnosis as follows:—"If at least 15% more of cases of gonococcal infection can be diagnosed by the cultural method than by the examination of smears for gram-negative diplococci, the superiority of the former procedure is obvious. Not only is the cultural method a valuable adjunct in the diagnosis of the disease, but it is also a dependable test for cure. A simple and reliable procedure, therefore, for the routine isolation of the gonococcus will be an invaluable aid in the control of Neisserian infection."

The investigations regarding the formulation of a practical precipitation test has not been encouraging. Price attributes this mainly to the want of a suitable antigen.

The most widely discussed subject in gonorrhœa is perhaps the complement fixation test. The credit goes to Muller and Oppenheim who first in 1906 employed the test in the serological diagnosis of gonococcal infections. Today many institutions on the Continent and in Great Britain use this method as a routine. Such a widespread enthusiasm is not reported from America. Krist Jansen with an experience of over 10,000 tests is of opinion that the test is "most reliable and ought to be employed universally". The test and its clinical application is well described in

a monograph of the London County Council by I.N. Orpwood Price. The test is a serum reaction which registers the presence or absence of specific gonococcal anti-bodies in the blood. The reaction itself does not signify the presence or otherwise of gonococci in the tissues. According to him the clinical interpretation of the C.F. test will be better understood if we make a differentiation between "open" and "closed" infection. A case in which the exudate finds its way out of the body tissues is considered as an "open" infection while one in which the discharge gets pent up as in deep seated organs is a "closed" infection. The practical significance of the differentiation lies in the fact that while in the "open" infection the body tissues get no chance of elaborating antibody response, in the "closed" type there is a great chance for such antibody formation. Price says that "a negative complement fixation test does not necessarily exclude a gonococcal infection, but must be interpreted in the light of the clinical condition of the patient together with any other pathological findings which are available". He holds that a positive result in a case which has not received vaccine is suggestive of a presence of living gonococci in the tissues. According to him the test is essential as a final "test of cure" but a negative result should always be supported by confirmation with smears and cultures. It may be said in general that the complement fixation test is most useful in cases especially of arthritis and other metastatic complications where other methods of diagnosis cannot help us. It has been the tendency now-a-days to look upon every case of uni-lateral painful swelling of the knee or any other joint as due to gonorrhœa. By adopting the complement fixation test this sort of probably-gonorrhœal ætiology can be once for all dispensed with. Toppley (1933) evaluates the utility of the test in the following lines:—"The higher percentages of positive results are obtained in the long-standing infections; and it is infections of this type that present the greatest diagnostic difficulties to the clinician and the bacteriologist. The complement fixation test in gonorrhœa is in fact, most likely to give positive results in just those cases where a serologic test is most useful". The Committee pleads for a greater standardization of the test. Certain problems with regard to the complement fixation test are not yet properly understood. How long a positive complement fixation test persists after cure is yet to be answered. Again in a number of patients in whom gonococci are absent by bacteriological investigations and in whom there are no clinical signs, may still show

a positive C.F. Test. Von Heimer concludes that the reactions may become negative before the eradication of the organisms from the body. He believes that "a stubborn positive reaction is always caused by a focus of gonococci, somewhere in the body and that if it remains after 3 months it means, not that the individual has had a gonococcal infection, but that he still has one". Cohn while agreeing with this view draws a distinction between "clinical and biological cure". Fröhlich and Jordon on the other hand conclude from their studies that the reaction may remain positive for long periods without a persistent focus. In this connection Brunet and Levine from their study of 10,000 C.F. tests conclude that in the absence of sero-positive syphilis, a positive gonococcal C.F. test means an active infection.

Another difficulty in the interpretation of the C.F. test for gonorrhœa is the fallacy caused by cross-fixation. This is said to be rare. According to Rullens this occurs especially in serum from late syphilitics suffering from gonorrhœa. Recent studies by Robert Brand have shown that in such cases the syphilitic anti-bodies can be adsorbed by kaolin leaving the antigens of the other disease to act specifically. Such a procedure will be really valuable as the cases in which the serologic tests are doubtful are also apt to be ones in which clinical differentiation is difficult. Our experience with cultural methods and complement fixation test is very limited.

Clinically some of the lesions which were formerly considered as absolutely pathognomonic are no longer held to be true. The disease is still described in the different zones in both male and female. With the advent of better cultural facilities, diagnosis of gonococcal septicæmia is made more often. The toxic skin reactions are but a clinical rarity. In females gonococcal peritonitis is not commonly met with considering the number of tubal infection that are seen. Varied views are expressed regarding the influence of co-existing diseases in the course of gonorrhœa. The urethroscope is now more frequently used as a diagnostic aid.

Even today the immunity and allergy mechanisms in the case of gonococcal infections seem to be little understood. The Committee has however attempted to give a critical abstract of the trend of research on the subject. "The existence of a natural immunity to gonococcal infection is still a matter of opinion. There seems to be some indications that recovery from a local gonococcal infection depends upon the establishment of a local tissue immunity". Pelouze even by his vast clinical experience is unable to answer why the ingestion of alcohol and

sexual excitement lowers the resistance of the genito-urinary tract to invading gonococci and why such complications as epididymitis in the male influence favourably his urethritis. He believes that the answers to those questions are closely connected with the underlined facts of the immunity mechanism in gonococcal infection. The conception of allergy in gonococcal infection is a novel idea. Some clinical experts are of opinion that the metastatic lesions which were thought to be due to gonococcal septicaemia may be perhaps of an allergic nature; particularly so in arthritis, lesions of the uveal tract of the eye etc.

Mention may be made of the diagnostic values of the cutaneous tests employed in gonorrhœa. Some claim specificity for these tests. Various products of the gonococcus are employed. There is no general agreement on their utility. Very recently Mutermilch and Grimberg introduced an intradermal test using the Polysaccharides isolated from the gonococcus. The patient gets an intradermal injection of 1/5 c.c. of a solution containing 1 mgm. of the polysaccharide per c.c. The reaction is read after 24 hours. A positive reaction is indicated by a papule formation ordinarily of the size of a lentil surrounded by a zone of erythema. The authors claim this test as a valuable aid in the diagnosis of gonorrhœa.

Nothing epoch-making has come out as yet by the researches done on the therapeutic measures of gonorrhœa in recent years. W. M. Brunet and Sam Seltzer aptly summarize the present position thus: "There is no accord as to which is the best method. Anterior urethral irrigation and antero-posterior total irrigations, irrigation by the gravity method, and irrigations, by means of hand syringe, anterior irrigations and posterior irrigations, injections once daily and injections 6 to 8 times daily; injections no larger than 5 c.c. and injections of 15 cc. and more—each of all these methods are recommended as "best methods" for the treatment of gonorrhœa. In truth, in no other disease are so many and such differing "best methods of treatment". Among the vast number of chemical agents there is no agreement as to which is the best. The same substance while giving excellent results with one physician leads to nothing but "anxiety and disappointment in the hands of another." Herrold expresses that "gonorrhœa is the one common disease of known ætiology in which there is a general lack of uniformity of treatment." One real fact that has evolved and has been accepted by all is the danger of over-treatment. "Over-treatment is distinctly worse than no treatment."

Pyrotherapy or therapy by heat is employed in two ways in the treatment of gonococcal infections. It is employed both as a local measure and in the production of artificial fever. The former is not new and is mainly employed in women, the only advancement made being the newer devices that are put forth day by day. Williams in his experience says that diathermy is only an adjuvant of treatment. It is still doubtful whether the good results are due to direct lethal effect by the heat on the gonococcus or indirectly due to the increased vascularity induced by the therapy locally. Elliot has devised an ingenious apparatus for local thermotherapy. A distensible bag in the vagina, is kept full of a stream of water whose temperature is gradually raised from 115 degrees F. to 130 degrees F. and maintained at the level for the remainder of the treatment period for an hour.

The introduction of induced fever as therapeutic agent by Wagner Von Jauregg in 1918, marked the beginning of a new era in the treatment of certain forms of syphilis and gonorrhœa. General hyperthermia in the treatment of gonococcal infection is thus a recent development and a valuable addition to our therapeutic armamentarium. Different methods are sought but Malarial therapy is the one which is more commonly and more effectively employed. It is more useful in the metastatic complications, much more of the joints. W. W. Simpson argues that gonococcal arthritis is a manifestation of systemic disease, requiring systemic treatment and thus he maintains that "high sustained, controlled and artificial fever is the treatment of choice for gonococcal arthritis". He reports 80% improvement in acute cases and 66.1% in chronic cases. In his experience of Malaria therapy in such conditions Werther recommends an average of 12 paroxysms, and by this method he obtained 96% satisfactory results in his 510 cases. Recently pyrexial therapy has been favourably reported in the treatment of Keratoderma blennorrhagica. Kummer's view with regard to Malarial therapy is that it brings into play some other beneficial influence besides that of the induced fever. An elevation of the body temperature which is a feature of many other methods of treatment such as the injection of the various products of the gonococcus or other bacteria, or non-specific protein substances, may be the cause of the good effects attributed to them by their respective exponents. Desjardins and others at the Mayo Clinic have reported success in the treatment of gonococcal urethritis and arthritis by artificially induced fever by enclosing patients in

properly heated cabinets. The Kettering hypertherm machines introduced recently are used for similar therapy. Considering the almost universal incidence of gonococcal infection, it is highly doubtful whether such costly and hazardous method of treatment as induced pyrexia in air conditioned cabinets or by short wave diathermy can ever be employed on a scale in the mass control and eradication of infection.

The use of chemical agents in our siege against gonorrhœa must still be considered empirical. A drug, potent in high dilution with considerable penetrability of human tissues without causing any damage to them and exerting a specific action on the gonococcus has yet to be discovered. Most of the drugs are useful as preventive measures when used immediately after coitus when the gonococci are still on the surface of the tissues. Of the chemicals employed, the protein silver compounds, acriflavine and potassium permanganate are the most useful. Some of the older drugs like sandal wood oil and capaiba still find a place in the treatment.

The claims made for pyridium orally are not warranted according to the general consensus of opinion.

None of the intravenous medicaments can be said to have any specific action. Jansion advocates the intravenous administration of 'gonacrine' (Diaminoacridine—chlor methylate) "both for its intrinsic anti-bacterial action and to render the patient more sensitive to other influences, which he believes are beneficial, in this instance, actino-therapy". Dale has shown by experiments that such compounds will definitely increase photosensitivity but the relation this bears to the immune process toward gonococcal infection is not understood.

Of the organic mercurials the following are being investigated. Mercurochrome, Metaphen, merthiolate, phenylmercuric nitrate and phenyl mercuric chloride. Kissmayer of Copenhagen has recently introduced a new silver preparation in clear solution called 'citragan'. 'Neoreargan' is another of the new silver salts strongly approved by Max Joseph and other European authorities. It is used as a 5% aqueous solution using cold distilled water. Still another drug has come to the fore-front recently in the treatment of gonorrhœa and that is prontosil. (One brand of Sulphanilamide). Sulphanilamide has been claimed to exert a lethal action on gonococci at all stages. A vast amount of literature has appeared recently by different observers from clinics in all parts of the world regarding the therapeutic utility of

Sulfanilamide in Gonococcal infections. A considerable amount of optimism prevails.

Dees and Colston (1937) of the John Hopkin's Hospital were the first to draw attention to the use of Sulphanilamide in cases of Gonorrhœa. It is difficult in this short review to discuss the experimental background in the evolution of this intriguing product. Chemically the drug is an azo-dye containing the P-amino phenyl sulfanilamide group. There are many proprietary preparations available in the market, all with more or less identical therapeutic effect. We have been trying a number of these products such as Prontosil Rubrum, and album, Colusulanyde, Pro-septasine, Sulfanilamide (P. D.) urea sulphazide, and uliron. All these were tried orally in our cases. At present we are able to set forth only certain general impressions. In our experience infections in all stages except the very recent ones have responded very satisfactorily. It has been uniformly observed that the subjective symptoms of dysuria, strangury and frequency of micturition have been reduced remarkably even after the first day's treatment with an initial heavy dosage. The quantity of discharge is progressively reduced or even completely stopped from the commencement. In many cases just before the cessation of the active discharge the nature of discharge changes from the purulent or muco-purulent type to a mere mucoid one devoid of any colour of pus. The drug is not satisfactorily borne by people above 50 even if the dosage is reduced to a minimum. The therapeutic effect of the drug on the disease in the female seems less marked than in the male. Satisfactory response has been noted in vulvo-vaginitis of children. While symptomatic improvement in acute complications such as epididymitis and trigonitis with hæmaturia has been observed, metastatic joint complications and deep seated infections such as prostatitis, Cowperitis and vesiculitis have shown poor response. We have found however, that in joint complications a combined therapy with pyrexia followed by Sulfanilamide does real good. In general sulfanilamide seems to act better in urethral gonorrhœa than in the adnexal infections.

The important problem in Sulfamilamide therapy of Gonorrhœa is the fixing of the effective and safe dosage. We have been trying different schedules in groups of cases with a view to find out the optimum dosage of the drug. We have observed that an initial heavy dose at least during the first week of treatment is essential for rapid and successful results. Administration of smaller doses, far from having any beneficial effect,

seems to render the infection more resistant with a tendency to spread.

The response of uncomplicated urethritis to this therapy seems to be better when it is combined with local irrigation with Potassium Permanganate lotion and the oral administration of an alkaline mixture.

The urine in most cases either showed an increased phosphatic excretion making it very hazy or highly coloured even when the colourless compounds were administered. Interesting observations were made by studying the slides periodically in these cases. Day to day examination of slides reveal a rapid diminution of pus cells and Gonococci and the latter mostly extra-cellular. Secondly, a change in the staining of the gonococci was observed, the gram-negative diplococci turning to be evident in the urine sediment for a long time. Toxic symptoms except severe agranulocytic syndrome and sulfhæmoglobinæmia have been noted in a few cases. These included high fever, 104 degrees or more, loss of appetite, giddiness, extreme mental dejection even leading to a melancholic state, epigastric pain, palpitation, nausea, vomiting, sleeplessness, shortness of breath, constipation, intense asthenia, sometimes diarrhœa with blood and mucus, neuritic pains, polydipsia, headache, and measly itchy rash. Some cases showed transient leucopenia with a relative neutropenia. The various toxic symptoms were non-progressive and disappeared after stoppage of treatment.

There were a few cases in which a negative smear on administration of small doses of sulfanilamide became positive for gonococci acting thus as a provocative.

The importance of initial massive dosage has made certain workers to evolve a new schedule of dosage commencing with over 5 grm. a day for the first 2 days and progressively reducing to a smaller dosage towards the end of the treatment. As the dosage is diminished the number of days is increased. No rest between successive courses is allowed. This method is worthy of trial in selected and preferably hospitalized cases. One great point with sulfanilamide therapy, we think, is that the patient must be subjected to daily observations.

It may be presumptuous on the part of any one to jump to any conclusions in this new line of treatment. We have yet much to know about the properties and therapeutic utility of this drug in gonococcal infections.

Calcium has a definite place in the treatment of hyperacute cases and of acute complications such as posterior urethritis,

vesiculitis, epididymitis etc. Biological products accredited with the property of the specific action in gonorrhœa are many. After all, the use of them are far from being satisfactory, though vaccine if properly administered has a very important place in our fight against gonorrhœa. Thomson's *detoxicated vaccine* is very widely used in Great Britain. As long as our knowledge of the chemical composition of gonococcus and its metabolic products are imperfect we cannot get at a specific anti-virus.

The success reported by Rogers and Torrey with anti-gonococcal serum is thought by Harold and others as due to the anti-toxic effect rather than anti-microbial.

A great therapeutic advancement is claimed by the introduction of a specific anti-toxic serum for gonorrhœa recently by the research staff of Parke Davis & Co. T. Anwyl Davis in his article in the B. M. J. (Feb. 13, 1937, p. 321) summarises his observation on the results of his experiences with this serum as follows:—

"The experimental gonococcus anti-toxin would appear to be the most valuable remedy which has yet been forthcoming since gonorrhœa was subjected to scientific investigation".

He obtained excellent results in 49.6 per cent of cases. He also noted a rapid decline of subjective symptoms in the acute disease, a comparatively shorter period of treatment, and a possibility to prevent the immediate complications such as posterior urethritis, vesiculitis, prostatitis and epididymitis, provided the serum was administered early. He reports satisfactory results in both acute and chronic cases. The dosage according to him is on an average 1 c.c. intramuscularly, daily of the unconcentrated serum. He recommends administration of 3 minims of adrenalin along with the serum as a routine to prevent the onset of any possible anaphylactoid reaction. Individualisation of dosage is the best procedure. From our trial of this product in 25 selected cases of Gonorrhœa in both sexes, we are unable to confirm the observations of Anwyl Davies and we fully agree with the recent findings of Burke and his co-workers in that this serum has no place in the treatment of Gonorrhœa.

The attempt at finding out a successful bacteriophage therapy has been a failure.

Some workers lay great emphasis on the reaction of the urine in the treatment of gonorrhœa.

Non-specific protein therapy by way of administering bacterial vaccines, milk in different forms and auto-hæmo therapy

are employed with benefit in some of the late complications and eye lesions. The mechanism by which benefit is obtained is not fully known. Mention has already been made regarding the use of hormonal products in vulvo-vaginitis of children.

The various improvements and new methods that are introduced in our diagnosis of latent and chronic gonococcal infections may lead us nowhere in assessing the value of the final tests of cure in gonorrhœa. Pelouze warns us not to be carried away by the plentitude of such methods and states that the safest and most practical evidences of cure to be followed are:—

- (1) Entire absence of purulent urethral discharge.
- (2) Microscopic absence of gonococci from the urethral, prostatic and seminal fluids and urinary sediments.
- (3) Inability to cause any purulent discharge after several efforts by the passage of sounds, with the massage of the entire urethra upon them, and the digital massage of the prostate, seminal vesicles and Cowper's glands, as well as the hypodermic injection of a provocative dose of gonococcal vaccine.
- (4) Lack of recurrence within three months upon resuming a mode of life that includes alcohol and coitus, particularly the latter".

In conclusion, one can easily find out from a study of this subject that sufficient attention has been bestowed on it by the research worker. An easily communicable disease with a very high incidence amongst the population, the ravages of which on humanity are manifold, and which saps the very essence of conjugal happiness; it deserves a closer and more thorough study in all its aspects. Being thus a disease of social importance our endeavours must rightly be directed to the emancipation of humanity from the vast amount of misery and economic loss caused by this formidable disease. If gonococcal infection is not a cause of sudden death it is certainly a cause for most of the long standing disabilities, gynaecological afflictions and chronic invalidism. It is a potent contributory factor in increasing the maternal morbidity rate of any country.

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Pitfalls in E. N. T. Practice*

BY

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To start with, I will take up Ear. The most ordinary and at the same time, invariably mishandled complaint by general practitioners is wax in Ear. Every one of you must have been familiar with cases that come with a history that they have been syringed a number of times by a Doctor but still, the trouble continues and on examination, we find there is plenty of wax inside. I am not at present concerned with what a general practitioner might or might not have done. But still, if I mentioned them here, it is because, my conclusions are arrived at partly from these cases and partly also from cases coming directly to me. I should like to lay stress on a few points regarding wax or wax like matter in Ear.

- (1) Very forcible syringing of Ear is never necessary.
- (2) If ears are completely blocked with matter and if it is not very hard, an opening must be made with a probe or scoop by removing some matter, when it is very easy to syringe the rest by forcing the water behind the wax.
- (3) If wax is too hard, never interfere unless you soften it sufficiently with some ear drops for a few days (hard round masses are an exception).
- (4) Any rough handling of the canal with instruments is bound to produce External Otitis later.
- (5) If the wax-like matter is due to Oto-mycosis, it can never be thoroughly syringed straight off. It is necessary in these cases to separate the stuff with a probe from the walls of the canal, to which it is sometimes very adherent when it can easily be removed with a forceps or syringe. Of course, this is a painful process and it might necessitate 2 or 3 sittings.

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(6) In most of the cases of recurring wax etc., the canal walls are infected, hence should be attended to with necessary Oint or Glycerine. Otherwise, the treatment is not complete.

(7) One need not get alarmed by the appearances of the Drum after syringing, which are due to constant irritation by the wax or to syringing and they pass off in a couple of days.

Ear Otitis.—Apart from the general causes, I would like to mention two important types of Ear Otitis—One is the result of acute or chronic middle Ear suppuration and the other is Ear Otitis produced by the Surgeon. I mean the cases that develop the trouble after removal of wax etc. I have had more than one case of this type in my hospital work. An ear is syringed of its decomposed wax, perhaps with a little difficulty and the next day the patient comes not with relief but with Ear Otitis. The causes for these two types are clear if one understands how coccal infections are produced. I can't explain better than quoting the words of my Vienna specialist, Professor Ruttin, and that is: "Staphylococcal infection can be produced by rubbing the virus on an unbroken skin while the strepto requires an abrasion at least for infection". Now, we can explain the frequency of Ear Otitis. The patient frequently meddles with ear with probes and thus produces Ear Otitis, which is primarily a staphylococcal infection. The same result is produced unconsciously by our manipulations to remove wax. In the case of middle ear suppurations, constant flow of irritating discharge with its necessity for constant cleaning is bound to produce abrasions in the canal and thus give rise to mixed infection also. Hence, it pays to remember the golden advice given by the same Professor:—"Always suck out the discharge with cotton, but never rub it against the walls" Hence, the usual habit of people twisting cotton probes in the ear, is to be highly discouraged.

One other common complaint of External Ear is constant irritation necessitating introduction of probes to scratch. I think this is due to a sort of mild skin infection in the Canal, but I must confess that I am not satisfied with the results of the treatment. The remedies that gave good results in my hands are Camphor Oint 1 or 2% or Mercury Oint, or *cusis dermose*. I have tried ionization with Stannoxyl with gratifying results.

Middle Ear.—The question of when and when not to operate on Mastoid is indeed a very difficult question. I am more conservative than radical in this. Everyone of you must have come

across typical cases with classical signs for urgent interference resolving unexpectedly, without operation. Equally, also is true of cases, which look apparently very mild, suddenly developing alarming symptoms, requiring an urgent interference. Hence, I say that one has to be very careful. On one side, we don't want to put the patient to the extra suffering of a mastoid operation, while on the other side, we have to be on our guard against the development of intra-cranial complications by too conservative treatment, when the operation also may be too late. In my practice, I follow the following line. In every case of Acute Otitis Media, either with no perforation or with very small perforation, I unhesitatingly do a paracentesis, which sometimes requires a repetition once or twice. With this done and with sulphanimide treatment combined with fomentation etc., if I find there are no signs of relief in two or three days and on the other hand showing signs of deterioration, I do a mastoid. But generally, the above treatment gives relief in large percentage of cases. In chronic cases, more time can be given to conservative treatment and if in spite of 2 or 3 weeks treatment, no abatement of discharge is visible and if signs of exacerbation of symptoms are persistent, an operation is to be advised (invariably a radical is required here). As for the results of operation, while in acute cases, one can expect very good results, the same is not true in chronic cases. Hence, this warning is necessary to be given to the patient. It is rather rare, to get a completely dry ear till a long time after the operation, requiring constant attention to the diseased M.M. of middle Ear, while a small chronic mastoid sinus occasionally gives a lot of trouble to the surgeon. Hence, it is necessary to tell the patient that the operation is done more to save him from dangers of complications than to give him a dry Ear.

Chronic Middle Ear Suppurations.—The conservative treatment of this is indeed very tedious and uncertain and much of patience is necessary on either side. In this connection, I always think of Prof. Ruttin's Golden words—"The complications are always in the neighbourhood of infection—Central perforations rarely give rise to complications, while marginal ones are to be dreaded."

Generally, I treat the Middle Ear by removing any polypoid growths etc., application of silver to unhealthy M.M. and syringing the attic perforations etc. If the foci of infection are easily accessible with big perforation, Zinc Ionisation is resorted to.

When all this fails utterly, the question of operation is raised. Even when all this treatment fails to cure, it is still in my opinion not a case for a hurried operation. An operation is to be advised only when there is reasonable doubt that the infection might lead to complications. There are people with middle ear suppurations suffering for years together but, that does not mean that they should necessarily develop complications. While there is a likelihood of complications in them, I think there is also equal likelihood of their not developing them, as natural deafness might have formed in them.

Catarrhal Affections.—While in acute catarrhal conditions either due to spread from nose or direct from middle ear, much can be done to the patient by prompt treatment, the same can't be said of chronic catarrhs, mostly the results of neglected acute conditions. In catarrhal conditions, of recent origin, due to acute nasal or acute suppuration of middle ear, prompt treatments like cleansing the nose and tubes, blowing in vapours and steam inhalations are bound to clear the trouble, while neglect of the same, is sure to make the condition, more intractable and less satisfactory to treatment. While in congestive types much relief can be given, I doubt if any can assure the same in adhesive types. On the whole, I never like to treat a chronic catarrh, although I like the huge fees it brings with it, only for one reason, that I can't give full satisfaction to the patient in the end. The apparent relief he finds is bound again to disappear in a short time.

Another thing in some of these conditions that I hate to treat is the "Tinnitus". I confess that I am disappointed with it and any suggestions for its treatment, will be very much appreciated.

The last thing that I would like to point out about the ear, is the demand from the deaf for some hearing apparatus. To my knowledge, there is no firm within our reach who deals in a variety of these instruments and in view of the fact that what fits one may be quite useless to another, I am absolutely helpless to give them an advice. Hence suggestions in this respect also are invited.

Nose.—The most intractable disease, I came across is "Chronic Rhinitis". The sinuses are clear, the septum is straight. Of course, there is turgescence of the mucous membrane and the turbinates are by no means healthy. There is a little amount of pharyngitis and perhaps small tonsils, which appear not quite

healthy. The patient complains of chronic colds, especially on slight change of weather and sometimes constant sneezing. I really do not know what exactly to do in these cases. The conditions in the throat are secondary to nose. I suspect some blood dyscrasia. Of course, we start with cauterisation, nasal alkalines, calcium by mouth, some ephedrinized nasal drops, and auto-vaccines etc. The result, though encouraging at the start, is in my experience never permanent. In 6 or 12 months, the trouble relapses. I would like to know if cauterisation is at all necessary in these and what the ætiology of these troubles is and I shall be grateful to hear the experiences of others. I would like to know if any one has come across typical hay fever cases and if so how they treated them.

In cases of sinusitis, especially chronic, I would advocate radical methods, like antrum puncture, making a window into the antrum, Caldwell-duct and opening of frontal sinus. They are really bound to alleviate the suffering of the patient, more than the conservative treatment.

The treatment of atrophic rhinitis, as I find, discouraging and so also the treatment of the symptom of "ANOSMIA" where the cause is not easy to find out.

Throat.—The common troubles that we come across here are Tonsil troubles, Peritonsillar Abscess, Chronic Pharyngitis Chronic Coughs and Pus in the Nasopharynx.

I don't like to go into the question of "Tonsils" here, as it is by itself a vast subject, which is bound to come up before us, some time or other. About peritonsillar abscess, I would only suggest that sooner it is opened the better. It may be sometimes that we don't see pus on opening but still it gives the necessary relief to the patient by relief of tension and pus comes out on the 2nd or 3rd day, when we attempt to open the wound gently with forceps. This early incision prevents the infection from spreading to the neighbouring parts. Sulphanilamide preparations or Colossal Argentum injections, I find, are doing a lot of good in these cases.

Chronic Pharyngitis.—This is another disease that invariably gives a lot of worry to the Surgeon. While our remedies do indeed give relief, the causes, producing the trouble like smoke, snuff and chew etc. we find, are difficult to be removed. Hence the vicious circle is kept up, and it requires a strong will and co-operation of the patient to control the trouble completely. The so-called pus in Nasopharynx is in many cases from the nose and

occasionally we find that it originates from septic adenoids or a growth from Nasopharynx. Hence the treatment of the actual cause is important here. The last but not the least important trouble, we have to deal with in this connection, is the troublesome cough that many a patient complains of. Actually we get cases sent by general practitioners, for E. N. T. examination, as the patients complain of irritating Cough. Here one has to be very careful in his diagnosis. Nothing is found in lungs. Perhaps the throat is congested or there is chronic pharyngitis or sinus infection or septal deviation or an elongated uvula. But how far these conditions or any of them are responsible for his symptoms is a difficult question to be decided and hence the diagnosis is to be guarded. Needless to say that we treat the various apparent causes. In some cases we find a uvulectomy gives an immediate relief. As this is a simple and harmless operation, I see no reason why the patients should be denied the benefits of it, where we suspect it. Of course, the elongated uvula, is in many cases the result of cough, rather than the cause of cough. Still, I find the uvulectomy in many cases is gratifying to the patient. The most fruitful cause of irritating cough in throat, I find, is hypertrophied Lingual Tonsils, at the base of the tongue. Some advocate scraping of them, but I have never tried it, as the instrument is not available with me. I treat them with silver 15 to 20% on curved probe with the aid of Laryngeal mirror—and it certainly gives the patient a lot of relief. The same Lingual Tonsils are also the cause of spitting of the blood, occasionally complained of by some patients, where we can find no other reason and the patient is nervous of Lung Tuberculosis. Examination in these cases with Laryngeal mirror, reveals unmistakably spots of recent rupture of small capillaries in the Lingual Tonsils.

Discussion on 'Pitfalls in E. N. T. Practice'.

(After the Paper was read on 9-11-'38).

Dr. G. P. Rayan said that regarding Ionisation for chronic suppuration of the middle ear, the best results are obtained only in Tympanic types, where the infection is confined to the tympanum itself. The perforation must be large and centrally placed, e. g. Kidney shaped or heart shaped, without involving the bony ring. The discharge must be scanty and mucopurulent. Ionisation was of no avail in eustachian, attic or mastoid types.

The treatment of *Otosclerosis* is still unsatisfactory. Every change of treatment seems to give temporary relief. Prof. Ruttin

was of opinion that even mere syringing of the ears gave some relief to patients. Injection of Thyroxine, which was hailed at the start in England does not seem to find many favourites at the present time.

Dr. V. R. Kamath said that there were three causes of *Obscure coughs*, which were often overlooked. One, namely, congestion or hypertrophy of the lingual tonsil, had been mentioned by the reader of the paper. The second was *secondary* syphilitic pharyngitis. Considering how common syphilis is, and that *secondary* syphilitic lesions in the pharynx are the commonest of all syphilitic manifestations, he thought that young adults coming with a history of recurring sore-throats, fever, and pains in the bones, and showing a dusky-red mottled appearance of the soft palate and fauces with a sharp line of demarcation from normal mucosa, should have a W. R. done. The third cause was wax in the ear especially in children in whom the Arnold's nerve reflex was active. He had been able to cure long-standing cough even in adults by syringing out hard wax from the ears. As regards tinnitus in otosclerosis, he would put in a plea for the trial of adrenalin injections; two minims of the 1 in 1000 solution were injected subcutaneously in the mastoid region once a week for six weeks. He had obtained very gratifying results in a few cases with this method.

E. V. Srinivasan mentioned two cases of constant sneezing, relieved by fitting of correct glasses (Astigmatic). He said that gastrointestinal disorders are a fruitful source of Pharyngitis.

The President said that though paracentesis of a bulging Drum is the classical treatment, he doubted if any treatment could prevent spread of the disease in mastoid, when once it had started and wished to know from the speaker if he could claim any cases where he prevented mastoid complications by paracentesis.

Dr. C. V. C. Rao, in reply said that it was not possible definitely to say that a particular case was saved from complications because of early paracentesis. But, he claimed of cases with definite mastoid infection resolving after paracentesis and also admitted that he had cases, which developed complications in spite of paracentesis. His plea was only for an early paracentesis, especially, when bulging Drum and severe pain persisted, which treatment, while it was devoid of any harm, was likely to save many a patient from mastoid complications.

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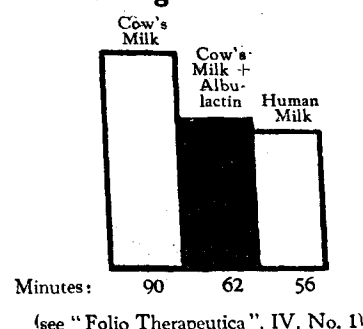
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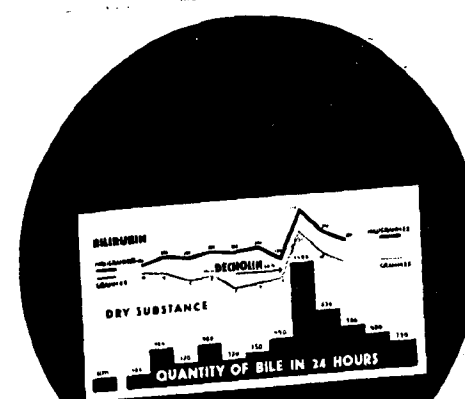
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CASES AND COMMENTS

A Case of Sarcoma of the Upper end of Humerus, Treated by Excision and Bone-graft from Fibula

BY

Dr. P. P. Sheth, F.R.C.S. (ENG.),
Hon. Surgeon,

Dr. R. D. Munshi, M.B., B.S. (BOM), D.P.H. (LOND),
Pathologist,

AND

Dr. S. M. Dave, B.M.S., M.B., B.S., B.H.Y.
Civil Hospital, Ahmedabad.

MANISHANKER GAURISHANKER, a Hindu male, aged 50, occupation cook, was admitted to Civil Hospital, Ahmedabad, on 19th June, 1938, for treatment of pain and swelling of the left shoulder.

History.—Patient had a fall from a height of ten feet some three years ago. The fall was direct on the left shoulder. Consequences were not serious and the patient had no serious disability. Since about a year ago, patient began to feel pain in the left shoulder, and he also noticed a swelling increasing gradually with gradual loss of power, thinning, and wasting of the lower part of the left arm.

Physical examination.—Swelling was present in the region of the left shoulder extending from the acromion to the deltoid tubercle. Skin over the affected part was shiny, and wasting of the muscles of the left arm was marked. Active and passive movements of the shoulder joint were painful and limited. Abduction of the joint was not possible at all. Glands in the axilla could not be palpated.

General examination.—Nothing abnormal found.

Investigations.—Blood negative for Kahn's Test.

X-Rays.—Enlargement of the head on left humerus seen with rarefaction. A line of demarkation present at the middle of the shaft. No secondary metastases present in either lung.

Diagnosis of the Giant-celled tumour of the left humerus was made and it was decided to operate.

Anaesthesia.—Chloroform.

Operation.—An incision 6" long was made from a point above the coracoid process to the deltoid tubercle. Delto-pectoral groove was looked for. Deltoid was found wasted; it spread over the growth which lay hidden underneath. Biceps was identified, and muscles attached to the upper end of the humerus were detached. The enlarged upper end of the humerus was sawn off and removed together with the capsule and some spread-out fibres of the deltoid muscle. Wound was packed with hot saline towels.

Left fibula was exposed by an incision 8" long on the outer side of the leg, and muscles attached to its head were detached. Common peroneal nerve was identified and hooked aside. Upper 6" of fibula together with the periosteum was sawn off; but the circular saw which was worked by the hand, slipped a little during the process and the nerve was severed. It was, however, immediately sutured up. The separated portion of the fibula was pegged in the marrow cavity of the humerus with its head in the glenoid cavity. Both wounds were then sutured up and they healed up by first intention within eight days. On the third day, however, a slight but distinct weakness of the extensors of the left foot was noticed. The leg was kept on the back spindle with foot piece. The patient was discharged cured on 19th July, four weeks after the operation.

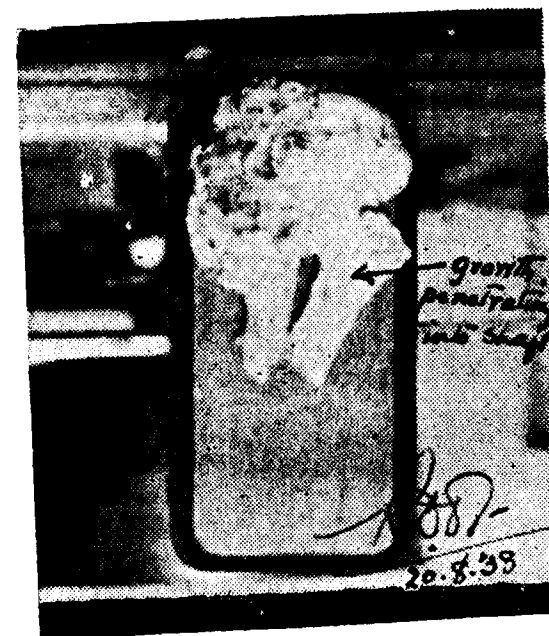
Pathological report.—Examination revealed the fact that the head of the humerus though enlarged, was not expanded. The tumour was soft and the bone was friable, and on every slight manipulation, the head separated from the shaft near the epiphyseal margin. The growth penetrated a little into the shaft. Microscopical examination revealed the tumour to be an Osteo-Sarcoma of the head of the humerus. Small round and spindle cells predominated with thin connective tissue stroma. Very careful examination failed to reveal the presence of a single giant-cell.

Conclusion.—The patient is at present in a fit condition with all the movements of the left shoulder though limited, and the pain for which he came to the hospital has completely disappeared. He is also able to perform all normal movements and make a perfect use of his left leg.

This case is rather unusual in our opinion looking to the fact that though the growth has been rapid, X-Rays did not show any secondary metastases in the lungs and the axillary lymphatic glands have remained completely free.

**A Case of Sarcoma of the Upper end of Humerus
Treated by Excision and Bone-graft from Fibula**

By Drs. P. P. Sheth, R. D. Munshi and S. M. Dave.



A Case of Accidental Hæmorrhage

In the sixth month Treated with Cæsarian
Section and Hysterectomy

BY

Dr. S. R. Gore, L.M.S.,

*Hony. Surgeon and President,
The Hubli Co-operative Hospital, Hubli.*

MRS. LAXMI BAI DESAI, aged 22, fourth para, six months pregnant, was brought to the Co-operative Hospital on 11-4-'38 at 11 A. M. Condition on admission : Slight bleeding from vagina. Os dilated $1\frac{1}{2}$ fingers, pulse 120, looked very anæmic, bladder full, relieved by catheterisation. Attendant Lady Doctor advised her to stay in the Hospital under observation.

I saw her at six P. M., when pulse was 160, patient was very restless. Uterus oblique, very hard, fundus nearly reaching the costal margin ; no bleeding per vaginum since admission to hospital. Condition of patient was precarious. Obviously, she was bleeding inside the Uterus. Cæsarian Section and removal of the Uterus was decided on. The removal was necessary as the dilated uterus was not expected to contract sufficiently to check hamorrhage and the woman could afford no more bleeding.

A pint of Saline was given subcutaneously and while the operation was going on, Carnricks Gum saline one pint was slowly being given intravenously.

On opening the Uterus, a very large quantity of blood was ejected together with the placenta and the foetus. Cavity of Uterus was instantly packed with a towel but, there was no sign of contraction in the Uterus. The Uterine arteries were, therefore, immediately ligatured and the subtotal removal of Uterus with preservation of one Ovary was done. Anæsthesia general : Progress has been uninterrupted except for slight Cystitis due to Catheterisation. Wound healed by first intention. She is still anæmic, but is recovering gradually.

There is no history of toxæmia in this case. There was no other cause for the accidental hæmorrhage except a Motor journey on a bad road of about 90 miles two days previous to the occurrence. She says she had no pain on the day previous to the hæmorrhage. She observed slight bleeding and had pain early in the morning on the 11th, when the Lady Doctor examined

her. I wonder if the journey had anything to do with the hæmorrhage.

These cases are rare and the result of this operation done for this condition also according to authorities is attended with only 40% success. I have reported the case for its rarity. In my experience of 35 years, I had not seen a similar case but, I am a General-Surgeon and my work is not confined to Obstetrics and Gynæcology, so my opportunities for getting this type of cases are limited. Perhaps, it may interest some of the readers of your valuable journal.

A Case of Raynaud's Disease

BY

R. D. Pendre, M.B., B.S.,

Poona City.

A MALE patient, aged 24, came under treatment for pain in, and coldness of the toes and dorsum of the right foot. He had three days' fever about three weeks previously. Soon after the fever, it was noticed that the toes of the right foot were becoming more and more cold, and the colour of the affected part changing to black. The foot now began to ache, and though completely anaesthetic superficially, tarsal and metatarsal bones were painful and tender and walking was impossible. The pain was more severe at night. There was some local swelling, not fitting on pressure. He had no fever, and except for his foot complaint he was feeling well. His bodily development was fair, but was very badly nourished. He is a grocer by occupation. All the systems were examined but nothing abnormal was detected. Knee and ankle jerks were normal. Ankle clonus and Babinski's reflex could not be elicited. The disturbance in his cutaneous sensibility was very marked, in the the affected part. Toes were completely anaesthetic, tactile discrimination, sensation to pin-pricks and heat and cold being absent. On the dorsum and more proximally this became less and less marked, and about the ankle level and above it, sensation was normal. His deep sensibility such as muscle sense etc., was normal. There was no wasting and no loss of muscular co-ordination, and muscle power was equal to that on other side. Pulsation in the Dorsalis Pedis artery could not be felt on the

right side, while on the left it was normal. There was no history of exposure to venereal infection. His blood showed some secondary anæmia, but urine examination was normal.

Diagnosis.—The clinical picture was suggestive. Important points in diagnosis were, loss of pulsation in the artery, coldness and discoloration of the part, loss of cutaneous sensibility without any impairment on the motor side. Arterial degeneration and disease could be excluded as there was no visible pulsation, nor any thickening or tortuosity of arterial system anywhere in the body. Thrombo-angiitis obliterans is another disease, and it is characterized pathologically by intense perivascular and vascular thickening. Intermittent claudication, pain coming on now and then while walking is quite an early symptom. Neuralgic pains attack the extremity, as the peri-vascular nerves become engulfed in the inflammatory exudate. Arteries are very much thickened and in later stages are thrombosed and occluded. Pellagra has to be differentiated because of some likeness in the skin discoloration. In addition to skin changes Pellagra is distinguished by serious disturbances in central nervous system, and gastro-intestinal tract. There is also no loss in the pulsation of the arteries. Disturbances and impairment in cutaneous sensibility require leprosy to be excluded. In leprosy, arterial pulsation is not affected, but there is a rash, thickening of nerves, and possibility of demonstrating causative organisms. Help in diagnosis of Raynaud's Disease can be had, by noting how skin reacts to the local application of histamine or cocaine. The response to either of them is delayed and not as marked as in the normal.

Regarding the ætiology of this disease, very little of a definite natural is known. Malaria, Anæmia, Syphilis, diseases of Spinal cord, Lead and Tobacco poisoning, Intestinal intoxication and many other factors are supposed to play some part in its causation. However, the very long list of possible causative factors is an evidence of our ignorance. The various signs and symptoms are explained by vaso-constriction of distal arterioles. There are two views as to how this vaso-constriction is proclaimed—one explains this by excessive vaso-constrictor nerve-impulses along the sympathetic nerves. Other theory is that of Lewis, who believes this vaso-constriction to be due to some abnormality in the walls of the small peripheral vessels. If the first view was wholly sufficient cocaine by its action of Paralysis of vaso-constrictor nerves, one would expect, should be able to abolish the

arterial spasm. But, during the attack, effect of cocaine is hardly noticeable. Another fact that even after sympathectomy there are relapses tends to support the second view. Whichever view may be correct, two types of clinical symptoms are produced. (1) improvement of cutaneous sensibility due to loss of function of cutaneous sensory nerve endings. (2) Closure of the capillaries and verules producing ischæmia to be followed by cynosis and Hyperæmia.

Treatment.—No specific treatment is known. In the case of the patient, his diet was made more varied. Vitamins specially B and C were given in liberal quantities. Calcium and cod-liver oil were administered with a view to improve his general condition. As vaso-constriction is the chief basis in the production of clinical picture, he was given Gynegen tablets (Sandoz.) to induce vaso-dilatation through the stimulation of Parasympathetic. Anaphylactin injections were given with the same object. Whether experimentally, this reasoning would be confirmed or not, clinically improvement was noticeable after commencement of this treatment, so that within a month and half, his foot has become almost normal, there is no pain, the patient is able to walk, colour has returned to normal, anæsthesia and coldness have disappeared, and his superficial sensitivity has become normal. The pulsation on the Dorsalis Pedis artery can be felt, but it is definitely not as good as on the other side. There are periods of improvement and relapses in the natural evolution of this disease, and it is only two months now that the patient is well, and it is premature to judge the end result of the treatment. Patients suffering from Raynaud's disease are adversely affected by cold, which induces arterial spasm, and it is to be seen how this patient bears this cold season. If he shows a tendency to relapse now and then, surgical treatment of the removal of regional sympathetic ganglion, or of dividing Periarterial sympathetic fibres should be considered. This procedure may be helpful to this patient, as he is quite young, circulatory system does not show any degenerative changes, and above all locally there are no secondary changes of end-arteritis and the like.



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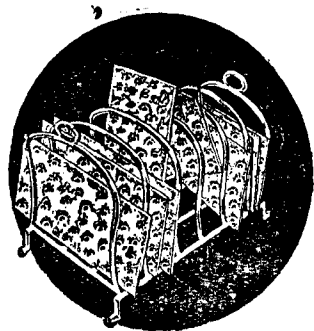
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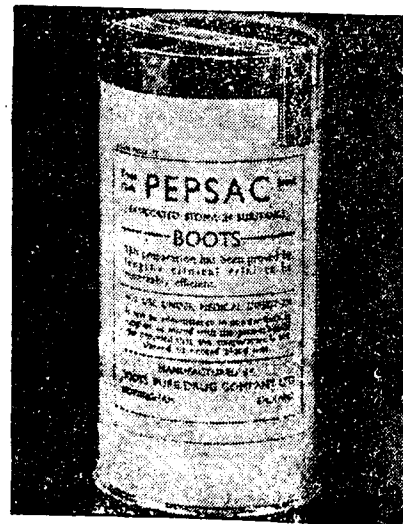
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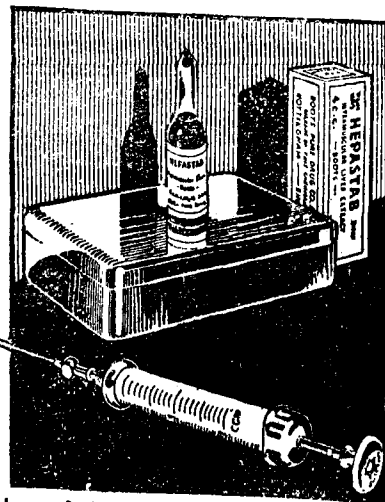
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No. 12.

EDITORIALS

The Public Health Bill

A BILL of far-reaching importance, we mean the Public Health Bill, has been introduced recently in the Madras Legislative Assembly by the Hon. Dr. T. S. S. Rajan, Public Health Minister, which has just passed the Select Committee Stage. The necessity for this Bill is apparent when we find that, despite more than a century and a half of British administration of India—and we may here say parenthetically, for nearly fifteen years, health administration of the country was in the hands of Ministers elected by the representatives of the people—the death and disease rates have not markedly decreased and maternity mortality still retains its high level, while other countries, Japan for instance, have succeeded in bringing down their mortality, general and maternal, and morbidity rates to an appreciable extent, within a short period of fifty years. The reason for this deplorable state of affairs is not far to seek. No doubt, public health provisions have been included in the various City Corporation and Municipal and Local Boards Acts, but their enforcement depends on the whims and fancies of Local Administrators and the finances of the Local Bodies concerned. No wonder that many of the provisions of these Acts relating to Public Health have remained a dead letter even unto the present day. There are also other factors which contribute to the general ill-health of India. They are, chiefly, poverty and

ignorance. The poverty of India is proverbial and the indebtedness of the masses is beyond redemption. Ignorance is another great barrier in the way of health-promotion. The Congress Government in this Presidency, soon after their assumption of Office in July last year, realizing the seriousness of the situation, have taken immediate steps to raise the standard of living of the masses and wipe off their indebtedness by two timely legislative enactments—the Prohibition Act and the Debt Relief Act. The Prohibition Act which operates in three districts now, has been pronounced to be a great success in Salem, where it has been, working for more than a year, not only by the officials of Government but also by disinterested non-officials of this Province and outside, who had studied the problem at first hand. As the Collector of Salem has observed in his recent report, the people look more hale and healthy than before, they spend more on food and other necessities of life, they have begun to forget the old days of misery and starvation, there is less of crimes now, they are better dressed and appear more tidy and that they have put by something to fall back upon during lean years. This is an eloquent testimony of the success of the scheme and this is a clear indication to show that the standard of living has considerably increased now. The Debt Relief Act has helped to enhance their prosperity and advancement and there is no gainsaying the fact that these two measures are sure to confer a lasting benefit on the inhabitants. These “Drink Prevention” and “Debt Redemption” Acts may be said to be the precursors to the Public Health Bill which is now in the Legislative anvil and which, the Public Health Minister has justly described in the Legislative Assembly, in answer to his critics, as the “Death Relief Act”. In our opinion, the Bill is timely and not a whit in advance of public opinion and of the people's intellectual and economic capacity to understand and withstand the stringent provisions of this Act.

There is colossal ignorance among the masses, no doubt, in matters pertaining to health and hygiene but, at the same time, it must be conceded that the individual in India is not altogether devoid of sanitary conscience. As Col. Russell, I.M.S., Commissioner of Public Health, India, New Delhi, in his recent broadcast talk on his Annual Report for 1936, observed: “*The individual Indian home is usually kept scrupulously clean, but the villager, like his prototype in other countries, sees nothing objectionable in the accumulation of refuse near his house nor is he aware of the danger arising from pollution of soil and water. The fundamental*

improvements required cannot be carried out by legislation alone. These depend mainly on the demand of a higher standard of communal hygiene from the people themselves and in the development of an educated public opinion. Fortunately, both are now gradually being realised but side by side with the educational activities now in force, Provincial Governments and Local and Municipal Bodies will have to take administrative action and encourage interest and activity”. The Hon'ble Dr. Rajan, has met this appeal by his Public Health Bill and in introducing the Select Committee Report, he gave expression to similar sentiments when he said: “*Experience has taught us the need for enacting legislation, which while being simple will give sufficient power to the health authorities to carry out all such measures as may be calculated to promote public health. When one considers the great harm that may be caused to public health by the ignorance and negligence of the individual, they can realise the need for stringent provisions being made to safe-guard the health of the Community.*”

On a close study of the Bill, we found that there were some lacunae in it. The Bill excludes provision for the maintenance of Vital Statistics and the Registration of Births and Deaths, which are integral parts of a Public Health Bill. It is contended by the Ministry that the Local Boards and Municipal Acts already contain provisions for compulsory Registration of Births and Deaths and, therefore they were omitted in this Bill. But it is a notorious fact that the Registration of Births and Deaths in local areas, especially, is done in a haphazard manner so much so, the figures are considered as unreliable for statistical purposes even now and it behoves the Government, therefore, to include those provisions in this consolidated Public Health measure and make them more stringent and effective. Further, no provision has been made in this Bill for certification of deaths by medical men, especially in municipal areas, which will not only facilitate the classification of deaths according to diseases, but also provide proper means for the Health Officer to detect early cases of infectious diseases and the wide prevalence of a particular disease in a particular area. This, in our opinion, is a serious omission which should be supplied.

The Bill is a consolidated measure incorporating recent advances in Medical and Public Health Science and containing provisions culled from the British and American Public Health Acts and made to suit Indian conditions. The following are some of the salient features of the Bill :—

I. Constitution of a Health Advisory Board.—The Board consists of the Ministers of Public Health and Local Administration, Director of Public Health, who is also the Secretary of the Board, the Surgeon-General with the Govt. of Madras, 2 members elected from the Legislative Assembly, and 1 member from the Legislative Council. The Select Committee have substituted *nomination* for *election* in the case of the latter three and added the Sanitary Engineer and another outside expert member making up the total to 9. Objection has been taken with regard to nomination of members but, in our opinion, it is immaterial, so long as the nomination is made from among the elected members.

II. Statutory recognition of the Office of the Director of Public Health and making him entirely responsible for the health of the Province and appointing him as the appellate authority in cases of difference between the Health Officer and the Local Bodies:—This, the opposition contend, is an infringement on the autonomy of the Local Bodies and the Corporation of Madras, which employs its own Health Officer and health establishment, is loudest in its protest. The Health Minister was however, adamant and stated in the Assembly that while the Health Officer should always remain under the control of the Executive, in the larger interests of the Province as a whole, the Director of Public Health should intervene in cases of difference between the Health Officer and the Executive on vital matters. We hope that this power has been taken by Government by way of abundant caution and not with any intent to over-ride the powers of a premier self-governing institution like the Madras Corporation.

III. Compulsory Employment of Health Officers by Local Boards and Municipalities and investiture of wider powers (including Police powers) on them.—This is a very salutary provision. Apprehension is felt in some quarters that the Health Officers may prove tyrants and misuse their powers. A rigorous penalty is provided for, to bring to book offending Health Officers, and this is apprehension is therefore groundless.

IV. Compulsory provision for supply of Potable water and levy of Water Cess.—The levy of water tax is authorized for the purpose and power is also taken by Government to direct any local authority to provide water to villages through which their mains may pass, provided their supply is sufficient and compensation is paid for it.

V. Notification of Infectious Diseases.—For the first time in the history of Medical and Health Administration of the Province, Medical Officers are statutorily compelled to notify infectious and communicable diseases on pain of penalty. Provision for notification of Venereal Diseases, made in the original Bill, has however been cut off by the Select Committee, retaining only 2 sections relating to free and compulsory treatment of those who have to perform public services such as dhobies, washermen etc.

VI. Fairs and Festivals.—Power is given to Local Administrations to levy tax on vehicles, boats etc., that bring pilgrims, where pilgrims tax through Railways is not levied, to meet the expenses of these local bodies.

VII. Finance.—All Local Boards and Municipal Councils must expend 33½% of their gross income and Panchayats 12½% for sanitation and exemption is granted to such of those as plead want of funds.

We think we have said enough to give a fair idea of the various provisions of the Public Health Bill, which is the first of its kind to be enacted in this country. With the active co-operation of the Public and the Local Bodies on the one hand, and the Local Bodies and the Govt. on the other, we have every reason to believe that the Act will prove a success and contribute to the health and welfare of the inhabitants of this Province. We take this opportunity of congratulating the Hon'ble Dr. T. S. S. Rajan, Health Minister, for the pains he has taken to draft and introduce a useful Bill of this kind, which has already gained universal approbation.

The Principalship of Madras Medical College

WE rejoice to note that Rao Bahadur Dr. A. Lakshmanaswami Mudaliar, B.A., M.D., F.C.O.G. has been permanently appointed as Principal of the Madras Medical College in succession to Lt. Col. Plumptre, I.M.S. retired. It is indeed an act of courageous statesmanship on the part of the Hon'ble Dr. T. S. S. Rajan, Public Health Minister, to break the traditions of a century and appoint an Indian permanently to the Principalship of the Madras Medical College, which had been a close preserve of the I.M.S. all along. Dr. A. L. Mudaliar is the right man in the right place, possessing as he does, both professional and administrative

qualifications of a high order. As a member of the Sente and Syndicate of the Madras University and the Vice-Chancellor of the same University, for some time, he has exhibited rare talents of administrative ability, which, we are sure, will stand him in good stead in his new sphere of activity. His suave manners and genial disposition will, undoubtedly, earn for him the high esteem and regard of the students and the Professors alike and we trust that his term of office as Principal will be marked by varied activities and all-round improvements and that the staff and the students will move together, as a happy family, in amity and cordiality. We congratulate him on his well-deserved elevation and wish him all success, in his new career.

Elsewhere, we publish a photograph of Dr. A. L. Mudaliar, and also his life-sketch for the edification of our readers.

The 29th Conference of the All-India Medical Licentiates' Association, Gauhati, (Assam).

WE have just received a copy of the Presidential Address delivered by Dr. D. V. Venkappa of Madras, at the 29th Conference of the All-India Medical Licentiates' Association held at Gauhati (Assam) on the 24th December '38. We publish elsewhere a summary of the address, the publication of the address *in extenso*, not being possible for want of space and time, though we should very much have wished it. The address is a remarkable document in more ways than one and emanating as it does from an old and tried veteran among Licentiates, such as Dr. D. V. Venkappa is, who has toiled long and hard for the uplift and amelioration of the lot of Medicoes called Licentiates, it has the stamp of respect and authority behind it. It is a well-balanced and a level-headed address, though forceful and emotional in some places. Dr. D. V. Venkappa is frank, perhaps brutally frank, when he tries to disillusion the minds of his brother licentiates, of unrealizable hopes and chimerical prospects as to their future. The present is a critical period in the history of the Licentiates in India and the licentiates are singularly fortunate in having at the helm of affairs one who is thoroughly fitted, both by his vast experience and profound knowledge, to guide them along right lines. We congratulate Dr. D. V. Venkappa on his well-merited elevation and wish him all success during his Presidential career.

Dr. D. V. Venkappa's views on the subject of Medical Education in India, are sound and well-reasoned. He stands for a uniform minimum standard of Medical Education in this country and in the contest between Medical Degree *versus* Medical Diploma, he is emphatic in holding that the medical degree is the best and the most suitable and consistent with the modern trend of thought the world over. "I have carefully weighed", he says, "the *pros and cons* of both and I am more than ever convinced that there should be only one portal system of Education, and that it should be through our Provincial Universities". Madras has already given the lead to the other Provinces by abolishing the L. M. P. and raising the Stanley Medical School into the status of a College. Recently, Major-General Bradfield, Director-General of Indian Medical Services, in his address before a Conference of representatives of Medical Schools from all the Provinces and States in India, has also advised the raising of the standard of Medical Qualifications in their respective areas and, in effect, laid stress on the adoption of the University Degree as the standard, as has been done in Madras.

The problem relating to the future of the existing Licentiates is looming large now and their non-recognition by the Indian Medical Council is considered by them a stigma to be removed at all costs. The solution, as Dr. Venkappa says, lies in repealing the existing Provincial Medical Acts in all the Provinces and re-enacting them on the model of the new Madras Medical Act, wherein the old distinction of 'Foreign Qualifications', 'Graduates' and 'Licentiates' has been removed and the names of medical men are arranged in alphabetical order in the Provincial Register, irrespective of their status or qualifications and a common electorate created for the seven seats allotted to the general practitioners consisting of Graduates and Licentiates in the Council. The Indian Medical Council could then be persuaded to maintain a similar register and even if the present Central Government should remain obdurate, the question could be moved when the Federal Government comes into being, which by the way is not far off, and matters set right. If only the right type of men are elected to the Federal Assembly, there is every reason to believe that the Indian Medical Council of the future will be quite different from the present, a more democratic and a less servile one, freed from the shackles of the General Medical Council of Great Britain. Any facilities which the Universities may give existing licentiates to qualify themselves for M.B.B.S. may not be practical politics,

as is evident from the experiment made in Madras, where no more than half-a-dozen licentiates could come out successfully, by this means, annually. Certainly, one must take courage with both hands to say, as Dr. Venkappa has said, with regard to the future of existing Licentiates :—"The bare truth of the matter, as I conceive it and as I would put without hiding it behind a verbiage of arguments, is that the position of the licentiates is not going to be any the worse, or better whatever may be the model by which you may choose to put into operation a standardised Medical Education. Let us not hide the truth because we do not like it. That would be cheating the existing licentiates to which I would never be a consenting party. Therefore it is, that whatever system of education you may adopt, it will not affect the present position of the existing licentiates either favourably or unfavourably, adversely or advantageously, because it is a system for the future and not for the present, because it is a system intended to serve not the existing licentiates but their successors and spare them the ridicule and the odium of the past. The past can never equal the present, nor the present can equal the future."

Coming to Medical Relief, Dr. Venkappa has some adverse comments to make. He is not enamoured of the honorary system of Medical Relief which the Madras Ministry has extended since last year. He says: "I consider the introduction and extension of the honorary medical service as wrong in principle, unworkable in practice and dangerous to the good and effective administration of the hospitals and also to the morale of the people. It is wrong in principle because the Govt. shifts its obligation of Medical Services to the people on to the Medical Practitioner, an obligation which the Govt. but not the Medical Practitioner owes to the people, because it collects taxes and administers them for their good. Besides, Honorary Medical Service, as promulgated and practised by the various Provincial Governments means nothing more than that the people are taught by the Govt. that even the Private Medical Services are something to which they are entitled without paying." Dr. Venkappa makes another astounding statement which calls for remark. He observes: "We see this effect actually illustrated in Madras, where owing to the recent extension of honorary medical service much beyond its natural scope and application, private practitioners who were prosperous a year before are now struggling for mere existence." It is too soon, we think, to draw such conclusions, as the Hony. System has been in vogue in Madras for several years previously and if

one or two additional appointments have been made recently, that, surely, could not have made the position of private Practitioners so dreadful as has been depicted above. Side by side with the hony. scheme, the Govt. have resolved to put a stop to private practice by Govt. Medical men and limit it to consultant practice only and this is to take effect a year hence. When it comes into force, private practitioners will certainly flourish and the hony. scheme, instead of killing private practice will aid it, as the knowledge and experience gained by Honoraries in State Hospitals will place them in good stead after retirement from honorary service and give them courage and confidence in their future career. Dr. Venkappa suggests that the costly superior establishments, the I. M. S. and the Provincial Medical Service should go and a form of state Medical Service should be established if not immediately, at least, on a ten-year programme, whereby "all the available Medical Practitioners in a Province should be recruited on a scale of pay from Rs. 50 to Rs. 100 with a couple of persons to supervise their work on a pay of not more than Rs. 500 a month, to increase the number of hospitals in each province and to see that every one of its citizens gets proper and timely medical relief." The honoraries in our Presidency are offered remuneration ranging from Rs. 20 to Rs. 100 under the present scheme, except in cases, where there is voluntary surrender of the offer and if only the initial scale of Rs. 20 is raised to Rs. 50 and all the available Private Medical Practitioners are appointed to replace existing service men as and when vacancies arise, retaining one or two at the top to supervise their work, will it not come very near the proposed Russian model of Subsidized State Medical Service? It is not in the power of the Provincial Governments nor of the Federal Govt. to come, to wipe off the I. M. S. by a stroke of the pen. The recruitment to the subordinate medical service has already been stopped and private practitioners are drawn in greater numbers, to render state medical aid, though not on the initial scale of pay proposed by the President. In rural parts, there are subsidized medical practitioners, who are rendering medical aid, if not wholly, at least partly, after the Russian Model. Further, we do not know if private practice is allowed in Russia. We think not, for, for aught we know, all private property there, except something left for maintenance, goes to the State and there can be therefore, no comparison between Russia and India, unless the latter also becomes a Socialist State. These are knotty points which are difficult of solution at present. We consider there is no room for

despair and we trust that the present honorary system will be developed in such a manner that while every man gets the treatment free, every doctor is paid a living wage. But, to achieve this end, more money and more medical men are required, which means a very long time.

With regard to the Indigenous systems of Medicine, we are entirely in accord with the views of the President expressed in the following lines: "There is nothing wrong and unpatriotic in attempting at a truly Scientific synthesis between the ancient Indian Systems of Medicine and Modern Medicine. On the other hand, it would be wrong and unpatriotic to segregate the former and keep it out of contact with the latter. The Provincial Governments should find a way of escape from the confusion of purposes that seems to distract them at the present and the best way of escape would be to introduce a compulsory study of ancient Indian Systems of Medicine into the curriculum of University Medical studies". At present, the Licentiates and degree holders in Indian Medicine get a smattering of knowledge in Physiology, Anatomy, Pathology, Obstetrics and Gynaecology and a deep knowledge in Indian Therapeutics. The only subject that counts, therefore, is Therapeutics and if this knowledge of Therapeutics is also imparted to the University students of Allopathic School, they can become full-blown graduates in both systems and can be at liberty to practise any system they like. Of course, it means study for one or two years more, which, in turn, means additional cost to the students. Unless and until an Indian Pharmacopoeia is prepared and substituted for British Pharmacopoeia, it may not be feasible to amalgamate both the systems. For this purpose arduous and sustained research work in Indian Medicine is necessary, which must be immediately undertaken by the Government. Till then, we are afraid, this proposal must wait.

Lastly, Dr. Venkappa's advice with regard to the future of the All-India Medical Licentiates' Association, is not quite acceptable to us. We are of opinion that it should be merged with the Indian Medical Association, which is no specialist's organization but is only an organisation intended for the benefit of the General Practitioners. The doors of the Indian Medical Association are freely open to Licentiates and many Licentiates have already joined this Association. There is no meaning in having a separate organisation for licentiates when there will be no more licentiates in the future, and when the Indian Medical Association is there to serve the same purpose as the All-India

Medical Licentiates' Association, whose name is proposed to be transformed into 'All-India Medical Practitioners' Association' or 'The All-India General Practitioners' Association' or briefly, 'The All-India Medical Association'. If, however, the Licentiates' Association fear that their rights and privileges would be trampled upon, they might join under 'safeguards' and we do not think the Licentiates would be treated differently or unjustly by the graduates, whatever might have been their past record.

On the whole, we think the address has been prepared with great care and foresight and contains good food for thought. We have nothing but praise to bestow on it.

CLEANINGS FROM MEDICAL PRESS

Obstetrics and Gynaecology

Height of the Anterior Shoulder and its Relation to the Position of the Foetal Heart.—By N. A. Purandare, M.D., F.C.P.S., Hon. Visiting Obstetrician, Sir, N. M. Wadia, Maternity Hospital, Hon. Gynaecologist, King Edward Memorial Hospital, Bombay, Hon. Lecturer in Midwifery and Gynaecology, Seth G. S. Medical College, Bombay.

It has been proved that the recognition of the anterior shoulder is of great value, along with other signs, in arriving at the proper diagnosis in a case of pregnancy in the later months. By locating the shoulder, the exact position in a vertex presentation can be distinguished. By measuring the height of the shoulder from the top of the symphysis pubis, the engagement of the head in the pelvis can be determined almost to a certainty. By noticing the distance of the shoulder from the middle line, not only can the anterior position be differentiated from the posterior but the gradual approach of the anterior shoulder to the central line in the course of labour as it is being followed indicates that the internal rotation is taking place. Further, when a patient is treated by a trial labour, the following of the anterior shoulder enables one to judge of the progress of labour. The height of the shoulder is a sure guide to estimate the exact situation of the head in the pelvis when it is proposed to apply the forceps in a case of protracted labour, for the large caput succedaneum then formed is liable to mislead and give a false

impression that the head is very low. Moreover, the height of the shoulder is also of service in denoting the exact sight where the foetal heart-sounds should be auscultated. This is not stationary but, varies according to the height of the anterior shoulder.

To determine the site of the foetal heart-sounds two lines can be drawn on the abdomen, one central and the other lateral. The central or middle line may be drawn between the umbilicus and the mid-point on the top of the symphysis pubis. The lateral line is drawn parallel to it and at some distance, the distance varying in the anterior and posterior positions.

In any posterior position, either the left or the right, the heart-sounds are heard on the lateral line, 2 inches away from the middle line. For measuring the height at which level the heart-sounds are heard best on the lateral line, it is convenient to make use of the central line. When the anterior shoulder is at the height of 2 inches, as is observed when the head is engaged and has reached the level of the ischial spines, the heart-sounds are heard on the lateral line at the level of 4 inches above the pubis as measured on the middle line. When the height of the shoulder is 3 inches, as it is seen when the head is half engaged and lying in the mid-plane of the pelvic cavity, the height is 6 inches above the symphysis, or two-thirds of the distance between the umbilicus and the pubis, and at that level the heart should be listened to on the lateral line. When the height of the anterior shoulder is 4 inches, which indicates that the head is engaging, the level of the sounds is about 7 inches high, or three-quarters of the distance above the pubis. When the head is floating the heart-sounds are heard at the level of the umbilicus and 2 inches away from it.

For listening to the heart-sounds in the posterior positions the lateral line is to be imagined from between $3\frac{1}{2}$ to 4 inches from the middle line, variations in distance being due to the exact position of the back.

From what has been said above, it is advisable first to discover the height of the anterior shoulder and thus the amount of engagement of the head, and then it is easy to determine where the foetal heart should be auscultated. In this way one can readily find the exact site and not waste time in listening elsewhere. For instance, when the head is floating and the anterior shoulder is at the height of 5 inches, the heart-sound cannot be heard anywhere except at the level of the umbilicus on the side of the back.—*Journal of Obstetrics and Gynaecology of the British Empire* Vol. 45, No. 2, page 287.

During the Age of Growth.

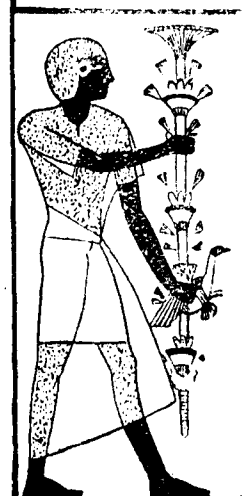
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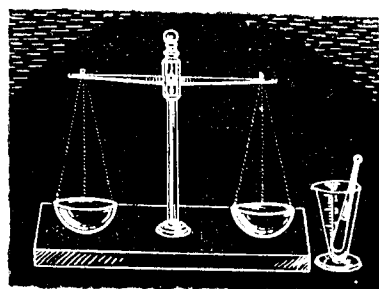
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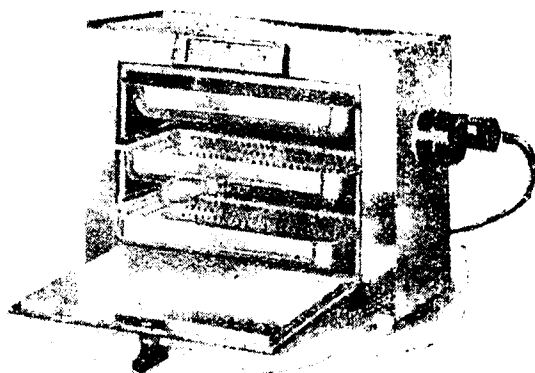
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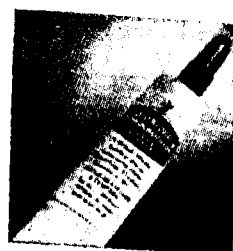
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The needle introduced by Dattner is used. It consists of rust-proof chromicised steel and is 7 cm. in length. The back of the neck of the patient, who is sitting up, is painted with iodine (without shaving). The groove between the occiput and the second cervical vertebra is then palpated with the finger pads of the left hand which have also been painted with iodine, whilst the head is loosened in the joint with the free right hand. The assistant then fixes the head between the palms of his hands so that the neck is in a vertical position with the chin slightly lowered. The needle is inserted above the first spinous process which can be felt and introduced further in a sagittal direction until a resistance can be felt or it may be supposed that the membrane has been reached (2-3.5 cm.). It should then be tested whether the needle sinks or remains in a vertical position. If the latter is the case, one should proceed carefully, millimetre by millimetre, whilst trying to aspirate cerebro-spinal fluid with a 5 c.c. syringe. If the hollow space of the cisterna can be felt and yet no cerebro-spinal fluid flows out, the needle should be rotated round its longitudinal axis or its patency tested by introducing a mandrin. The ability to feel the puncturing of the membrane and the hollow of the cisterna is easily acquired with a certain amount of practice.—*Klin. Wschr.*, No. 17, 1937.—*Medical World.*

The Etiology of Appendicitis, by F. G. Connell. *Amer. Jour. Surg.* 37: 232, 1937.

According to the author, it is important to distinguish between appendicitis *per se* and appendicitis with perforation and

peritonitis. He considers appendicitis as a result of obstruction, distension, circulatory stasis, and infection of the organ.

Obstruction prompts an inquiry as to its cause, which may be :

1. A foreign body, a mucus plug, edema, or neoplasm.
2. Stricture, stasis, angulation, or deformity.
3. Functional derangement or spasm.

1 and 2 operate quite obviously. 3 is explained as follows :

The ileocecal region differs strikingly from all other gastrointestinal regions in having a double parasympathetic distribution which permits the possibility of over-innervation, or under-innervation, or hypertonicity or hypotonicity at the juncture of the cecum and appendix. Regardless of the presence of a true sphincter at this point, circular muscles and extrinsic and intrinsic nerve supply do exist.

Like dysfunction in the foregut and hindgut, cardiospasm and pylorospasm, and colon and rectal spasm, a similar disturbance might occur in the midgut.

The difference in hydraulics, one organ forming a cul-de-sac and the other having a double open end, may account for some of the clinical differences between the above and appendicitis.

Like dyskinesia of the sphincter of Oddi, also, a similar dysfunction at the appendiceocecal junction is theoretically plausible.

The difference in the contents, one septic and the other comparatively sterile, may also account for some of the clinical differences.

The author feels justified in assuming that disturbance of the autonomic nervous balance might cause spasm or hypertonicity of the neuromusculature of the appendiceocecal juncture, which might account for the obstruction in a certain proportion of appendicitis cases.— *C. R. Jour. P. I. M. A.*

Treatment of Nephrosis

When treating a case of nephrosis with thyroid, the cholesterol level in the blood will serve as a guide to the treatment, for when this level is depressed below the normal, the thyroid should be discontinued. If thyroid by mouth fails therapeutically, then thyroxine should be given intravenously.— *Medical World.*

PROCEEDINGS OF CONFERENCES, SOCIETIES, ETC.

29th Conference of the All-India Medical Licentiates' Association. Gauhati, (Assam).

PRESIDENTIAL ADDRESS

In the course of his address, the President, Dr. D. V. Venkappa said :—

The Past and the Present

The licentiates have never made wild claims or demands. They have never asked for special treatment and consideration. But they have asked, and ask again with added emphasis, that they who continue to be unquestioned pioneers in medical relief for the last 200 years, who form the bulk of the profession, and who themselves demand a better standard of medical education should not be treated in a manner inimical to the dignity and solidarity of the profession and in a way which would mar their progressive usefulness to the nation. In the past, they have weathered many a storm, borne the brunt of work and the butt end of ridicule and are now resting in the hope that the policy of divide and rule in the profession, the policy of monopoly and exploitation and the policy of unfair preferences and unprofessional repression of talents and ambitions will pass into the oblivion of history, and that a new policy of co-operation, consolidation and unity will be ushered in the medical profession of our country which is in the travails of a new birth.

Uniform Minimum Standard of Medical Education

The advantages of one portal system of medical education are too overwhelming and too great to be rejected with impunity and without consequences to the future of medicine and medical men of this country. There need be no fear about the security and the safety of the existing licentiates merely because of the adoption of the one-portal instead of the dual system of medical education. Let us not behave like the prisoner of Chillon who fell in love with the chains that bound him.

The Problem of the Existing Licentiates

The non-recognition of the licentiates by the Indian Medical Council is sheer out-lawry of the worst type and it must be lifted by the united efforts of the profession. Then, we must garner the statutory rights and privileges conferred by law on

the licentitates and left to be administered by the Provincial Medical Council, by seeking for suitable amendments to the Provincial Medical Registration Acts as was done at Madras recently. Thirdly, easy facilities for higher medical education must be secured for them. These constitute the essential problems of the existing licentiates.

Re-model the Methods of Work

We must definitely give up the beggar's bowl. These are times when effective organisation and united action alone would bear fruit. Medico-political study groups should be formed by every Branch of our Association. Private licentiate medical practitioners who have time, ability, and inclination for parliamentary work should seek election to all representative institutions—from the legislatures down to the panchayats—and thus personally safeguard the interests of the licentiates. This is the hope and the method of to-morrow if we, the majority members of the profession, have to attain our legitimate ends and to be saved from our social, intellectual and professional atavism of yesterday.

Medical Relief

The present antiquated arrangement of medical services should go, if medical relief is to be undertaken by the Government, on a vast scale. The costliness of the existing medical services would be evident from the fact that the Provincial Governments are now trying to replace the costly state paid medical officers by honorary medical officers. But that is tinkering with and not solving the problem of medical relief. No better or more effective method of medical relief to our people can be visualised than by the introduction of the Russian Model of Socialised Medicine. To rely on private benevolence, voluntary hospitals and honorary medical service is like relying on broken reeds.

He appealed to all the Provincial Governments to clearly enunciate their medical policy, as clearly as they have said about their political policy and programme. And in shaping that policy he asked them to remember that the existing methods of medical relief through a system of highly paid medical services should be entirely, if gradually, swept away, and replaced by a uniform system of State Medical Service in which every available medical man should be employed and that increasingly large number of hospitals should be built and equipped, at least one for each five thousand of the population. Unless such a policy is adopted and a programme made to complete it during the course

of next 10 or 20 years, medical relief is bound to remain an unfulfilled shibboleth of the Government and a mere dream of the vast population it governs.

Indigenous Systems of Medicine.

The Provincial Governments are plunging the profession into a new struggle by organising the Indian systems of medicine on independent basis instead of absorbing them into the modern scientific system of medicine. It is palpably wrong to divide medical science into watertight compartments of past and present. The provincial governments should find a way of escape from the confusion of purposes that seem to distract them at the present time, and the best way of escape would be to introduce a compulsory study of ancient Indian systems of medicine into the curriculum of University medical studies. This would enable the Government to offer its people the best type of medical relief to which they are entitled. It is not right to impose on them different systems of medicine of doubtful value and utility merely because they are ancient. This mistaken policy must be set right before the profession is once again plunged into warring castes and creeds which are dangerous alike to its integrity and growth as it is to effective medical relief which is the ultimate aim of the Government and the profession.

The Future of our Association.

The spirit and the needs of the time are such that we cannot afford, and certainly it is improper, to live in proud seclusion and work only on behalf of a particular section of the profession. Let us, therefore, throw open our Association to all the general practitioners of India, let the medical graduates and the licentiates join hands to safeguard the interests, the rights and the privileges of general medical practice and make this organisation,

"An Assembly such as Earth saw never
Such as Heaven stoops down to see"

engrossed fully in the service of the profession and actively engaged in the service of the suffering humanity.

The South Kanara District Medical Association

A special meeting of the Executive Committee of the above Association was held on the 6th Nov. in the Wenlock Hospital with Dr. K. Vittal Shetty, President, in the Chair to consider Memo. No. 34730/1 D2, P. H. dated 30-9-1938 regarding the future pay and prospects of Rural Medical Practitioners.

A large number of Rural Medical Practitioners who were specially invited for the meeting to give their considered opinion, were present. The following resolution then moved from the Chair was passed unanimously.

1. (a) "Resolved that in view of the arduous, prolonged and expensive course that Medical Practitioners have to undergo; and the fact that the Rural Medical Practitioners have to settle down in remote villages with absolutely few amenities; and the fact that the villager is so poor that he cannot possibly pay anything tangible for the services rendered which naturally led the Government to grant subsidies and free medicines, though admittedly meagre; this Association is emphatically of opinion that in the best interests of Rural Medical Relief, the Rural Medical Practitioners should not be forced to work under the new scheme, Memo. No. 34730/1 D2, P. H. dated 30-9-1938, which is sure to cause hardship to the Practitioners, and considerable difficulties to the obviously poor suffering villagers."

(b) "The meeting authorises the Honorary Secretary to communicate the above resolution to the Hon'ble the Minister for Public Health, the Government of Madras, the Surgeon-General, the District Medical Officer, the President, District Board, South Kanara and the Medical and Lay Press."

The Medical Practitioners' Association, Nuzvid.

A monthly meeting of the above Association was held at Nuzvid on Sunday (20-11-'38) at 3 P.M. in Dr. Mrs. Seshagiri Rao's, dispensary, Dr. P. Anjaiah Naidu presiding.

Refreshments and tea were served to the members, meeting the cost from the Association funds. Then the minutes of the previous meeting were read by the Secretary, Mr. N. Rama Rao, which were accepted. The following case reports were read and discussed.

1. An early case of Sarcoma of the Thigh and one of criminal abortion resulting in Hyperpyrexia, Tetanus and death. Medico-legal aspects over the latter were discussed.

2. A case of Acute Haemorrhage per rectum and vomiting of blood of a sudden onset resulting in collapse and necessitating administration of saline, glucose and cardiac stimulants and other anti-haemorrhagic remedies, in a previously healthy adult male, treated by Dr. N. Rama Rao. The possible causes of such a condition were discussed by the members such as

acute duodenal or gastric ulceration, erosion of an Aortic Aneurysm in the abdomen: ptomaine poisoning and the possible rupture of the anastomosed vessels of the oesophageal branches of the thoracic aorta and those of the Subclavian Artery as a result of Hepatic congestion.

3. A case of Apoplexy with Hemiplegia of recent origin by Dr. V. Ananthachari, L.I.M.

4. A case of Ascites treated by Dr. S. Hanumantha Rao with Neptol and Decholine injections.

The members then passed the following resolution unanimously:—

"As this Association is of opinion that the Honorary Scheme now proposed for the Rural Practitioners by the Government in their Memorandum No. 34730—1 D2, P. H. dated 30th Sept. '38 will mar the prospects of the practitioners who have not been able to reach the expectations of the Government to stand on their own legs without the present emoluments, it resolves to request the Government to drop such an idea and to allow the Rural Practitioners as at present".

The meeting ended by 6 P. M.

The Indian Medical Association and The All-India Medical Licentiates' Association, Madras Branches

At a largely attended public meeting of the medical profession of Madras held under the joint auspices of both the branches of the Indian Medical Association, and the All-India Medical Licentiates' Association, Madras, at "Gana Mandir" No. 10, Thambu Chetty Street, Madras at 6 P. M., with Dr. D. V. Venkappa, Vice-president, Indian Medical Association, in the Chair, a heated discussion ensued protesting against the Indian Medical Council Act of 1933 as the one launched in India by a "tyrannical and outside body."

Drs. A. Viswanathan, K. Rama Rao and M. Sanjeeva Rao, who spoke on the subject expressed the opinion that the Indian Medical Council is only a tool in the hands of the General Medical Council of Great Britain and its present constitution and composition are fundamentally autocratic. There is an official majority which does not represent the independent medical profession at large, especially, when the bulk of the Medical Licentiates who cater to the daily needs of the masses in India go unrepresented in the Council.

The house discussed at length the various defects of the present Indian Medical Council and feeling the urgent need of a pressure on the Central Government by the Provincial Govts. to make the necessary amendments so as to make the Council popular, passed the following resolutions unanimously.

Resolution No. 1. *Moved by Dr. M. Sanjeera Rao, and seconded by Dr. M. R. Bail.*

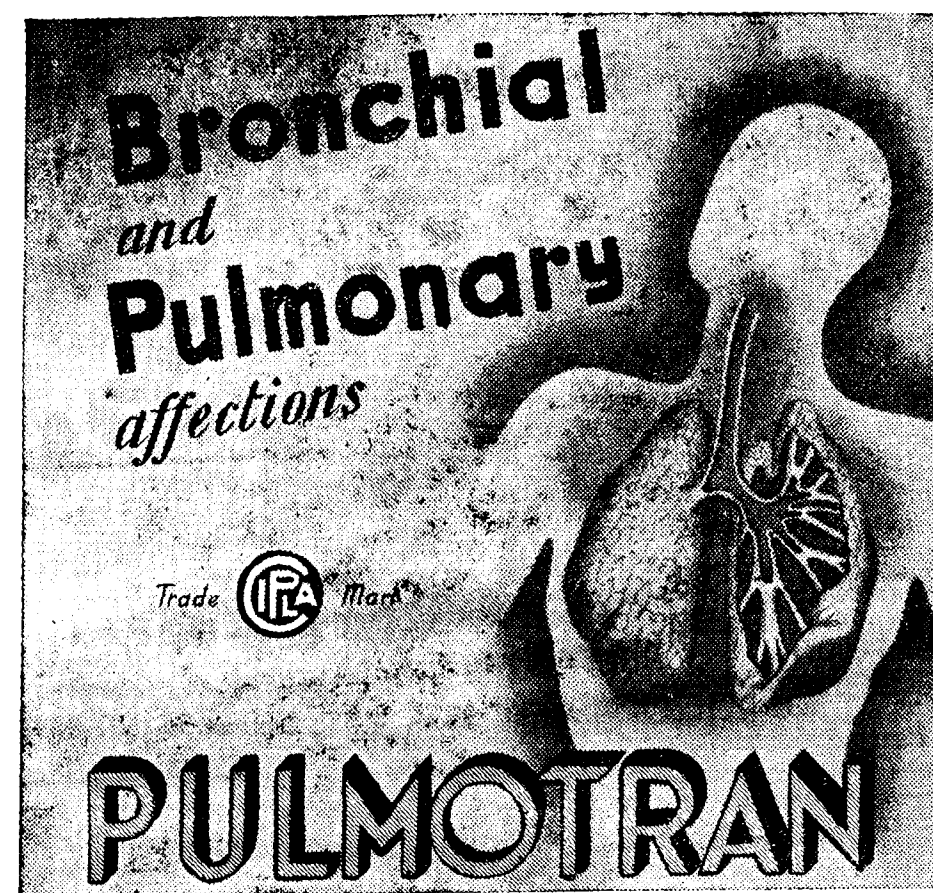
This meeting of medical men of the City of Madras assembled under the joint auspices of both the branches of the Indian Medical Association and the All-India Medical Licentiates' Association emphatically condemns the exclusion of Medical Licentiates from the purview of the Indian Medical Council Act 1933, and also certain provisions in the said Act, which restrict the representation of the independent medical profession in the Medical Council for India and which perpetuate the undesirable and unwanted dominance of the General Medical Council of Great Britain in our affairs and requests the Government of India to amend the said Act suitably in consonance with the demand made by the two premier medical organisations in this country, namely, the Indian Medical Association and the All-India Medical Licentiates' Association.

Resolution No. 2.—*Moved by Dr. A. Viswanathan, and seconded by Dr. R. Ramamjulu Naidu.*

This meeting, held under the joint auspices of All-India Medical Licentiates' Association and Indian Medical Association (Madras Branch) on 20th September 1938, requests the Government of Madras to urge on the Central Government to initiate the necessary amendments to the Indian Medical Council Act of 1933 so as to include within its purview: (1) Inclusion of the Medical Licentiates; (2) Maintenance of a common register; (3) Replacement of the present large official element by a complete non-official elected representatives and (4) Fair terms of reciprocity.

The letter from Dr. U. Krishna Rao, Member, Medical Council, Madras, expressing his inability to attend the meeting on account of his pressing engagement and pointing out his sincerest co-operation in all that the two bodies propose to do against non-inclusion of the All-India Medical Licentiates in the Indian Medical Council Act was read before the house.

The meeting terminated with a vote of thanks to the Chair.



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BOOK REVIEWS

Clinical Obstetrics—By A. L. Mudaliar, B.A., M.D., F.C.O.G., Professor, Obstetrics, University of Madras, Second Obstetric Physician, Govt. Hospital for Women and Children, Madras. 1938, 1st Edition, Pp. 819 with 213 Illustrations including 9 plates in colour. London: Oliver and Boyd.

[Price Rs. 18/-]

The Government Hospital for Women and Children in Madras is one of the largest recognized institutions of its kind in the East. It has been the centre of clinical instruction in obstetrics in India for many of the Indian Universities. Andhra, Lahore, Lucknow, Rangoon, etc. Post graduates from all over India and the far East have from time to time been given the benefit of clinical instructions at the Giffard School and the Hospital.

The author who is too well-known all over India and outside as one of the best and ablest teachers of Obstetrics has been connected with this institution for over two decades and it is so gratifying to see a book from the pen of one who has handled the cares and anxieties of the expectant mother, and helped her tide over periods of obstetric complications and during difficult labour.

This is a highly practical guide to all those who are confronted with difficulties in the management of normal and abnormal labour. We do not propose to give the readers any critical review of the book, but the chapters on Tropical Diseases, in relation to obstetrics, an inclusion of which is a unique feature of this book, and the section on Puerperal Infection, are well worth the perusal of any reader. There has been considerable advancement in the field of obstetrics of late and the author has made sufficient mention of such of those compatible with the title of this book.

One other aspect that makes this work valuable and useful is the inclusion of the author's personal experience, and advice on obstetrical problems that are likely to be too difficult often times. The general arrangement of the text is very good.

We congratulate Dr. Mudaliar on his success as an author and the publishers on their splendid get up at a tolerably low cost.

Manual of Public Health and Hygiene—By *J.R. Currie, M.A., M.D., F.R.C.P., D.P.H.*, 1938 Pp. 323 with 34 figures in the text. Edinburgh: E. & S. Livingstone. Indian Publishers: Butterworth & Co. (India) Ltd. Avenue House, Calcutta. [Price Rs. 10.]

This is specially intended for the use of medical students, but we are at the same time sure it will interest Medical Practitioners, and those engaged in general practice as well. "Administrative and legal points, except where they bear directly on the Doctor's own work or the welfare of his patients, have therefore not been elaborated".

Social aspects of hygiene have been given preference. After a few pages devoted to general survey, inheritance, parental and infant existence, his childhood and school-days, his working life and his old-age have been treated in that order. Section X deals with foods. Infection and infestation form the subjects of separate chapter. The last chapter deals briefly with international health relations where sea-ports, air-ports, air-raid precautions etc., have received due considerations.

Salts and their Reactions. A Class Book of Practical Chemistry—By *Leonard Dobbin, Ph. D.* and *John E. Mackenzie, D.Sc.* 1936. Sixth edition, Pp 246. Edinburgh: E. & S. Livingstone. Indian Publishers: Butterworth & Co. (India) Ltd. Avenue House, Calcutta. [Price Rs. 4/8.]

This book on Salts and their reactions deals with the properties of metals, oxides, hydroxides, acidic and metallic radicals, and gives practical exercises to demonstrate the laws of chemical combination by suitably arranged gravimetric and volumetric experiments, which students might perform and see for themselves in the laboratory. Sections on properties of salts, salt formation and decompositions, simple gravimetric determinations, Reactions of metallic and acidic radicals, Dry-way reactions and volumetric analysis are also included. This little book will prove to be a useful guide to students appearing for their medical Preliminary examination.

Midwifery by Ten Teachers—Edited by *Clifford White, Comyns Berkeley* and *Frank Cook*. 1938 Sixth Edition Pp. 676 illustrated. London: Edward Arnold & Co. [Price sh. 18/- net.]

It is needless for us to say anything in the shape of review for this very popular book. "Ten Teachers" is the most favoured of books among the students of midwifery. The Sixth Edition has been revised and every section has undergone a thorough review by the respective authors and discussed by the "Ten Teachers" before print.

Certain unavoidable changes among the "Ten Teachers" have taken place and their places taken on by teachers of equal repute.

Many new illustrations have been added and some redundant portions in the text have been deleted and much fresh matter added to keep the book up-to-date. It is difficult for a reviewer to give his opinion on a text book of this type, and we leave it for the readers

to enjoy the revised text which is quite as lucid as all its predecessors. The publishers deserve all our praise for the splendid get up of the book and that within the means of average students.

The Abnormal in Obstetrics—*Sir Comyns Berkeley, Victor Borney* and *Douglas Macleod*. 1938. First Edition, Pp. 525. London: Edward Arnold & Co. [Price sh. 18/- net.]

This is mainly intended for those ambitious of learning obstetrics as a specialty and for all those interested in the art obstetrics. As such, the authors expect the readers of this book to have already acquired sufficient elementary knowledge in obstetrics before they could utilise the text in a profitable manner.

The obstetrical abnormalities are presented in a descriptive and instructive manner while physiological, anatomical and surgical details have been omitted for the most part as the authors rightly observe. The effect of the body on gestation is of equal importance to the effect of gestation on the body, and the obstetrician is expected to possess a wide medical knowledge as well so as to enable him to follow his case and treat the various diseases and accidents that might arise in a woman during pregnancy.

The need for artificial aid during delivery have become a vexed question and when to interfere is often a problem of extreme difficulty and the responsibility rests with the obstetrician. The authors have fully realised these, and have given in this book the results of their experience which is worth reading.

More than seventeen chapters has been devoted to a consideration of many affections of the mother that may co-exist with her pregnancy. The rest of the chapters describe the complications that might arise due to the various affections in the passages, passenger and power.

Chapter 35 deals with the diseases of the breast, with 36 diseases of the new born, 37, with injuries and deformities of the new born 38, transfusion of blood and other fluids by non-oral routes, 39, analgesia and anaesthesia in obstetrics.

The book ends with a useful Bibliography that would help in seeking further knowledge.

QUERIES

Hon. Medical Officer on Epidemic Duty.

V. N. Chari, L.M.P., Palamcottah asks:—

'Will you or any of your numerous readers who are conversant with the subject, enlighten me as to whether an Honorary Medical Officer attached to a Government Hospital is a government servant and if so, whether he is not entitled to Travelling Allowances when posted for special epidemic duties, as in the case of other government servants?

Umckaloabo.

C. K. Pujar, M.B. B.S., asks:—

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ANNOUNCEMENT

**Indian Division of the
Royal Medico-Psychological Association**

Dr. Banarsidass, Mental Hospital, Agra, writes as follows:—

The first general meeting of the Indian Division of the Royal Medico-Psychological Association will be held on 23rd January 1939, at the Punjab Mental Hospital, Lahore, under the chairmanship of Lt. Col. C. Lodge-Patch, M.C. I.M.S., Medical Superintendent.

On the 23rd January 1939 at 8 P.M. the Association Dinner will be held. The dinner fee of Rs. 8/- should be sent before 10th January 1939 to Lt. Col. C. Lodge-Patch M.C., I.M.S., Medical Superintendent, Punjab Mental Hospital, Lahore, so that he may be able to make the necessary catering arrangements.

Dr. C. J. Thomas, an eminent member of the Association in England, is coming out to India and is expected to bring out for us some token of goodwill from London Head Quarters to be personally presented to the new Indian Division at its first meeting at Lahore.

NOTICE

Messrs May & Baker have sent us a copy of descriptive Price List of their well-known products. The brochure will be found very handy and useful for reference. Copies of it can be had on request to their Indian Office, at No. 11, Clive Street, Calcutta.

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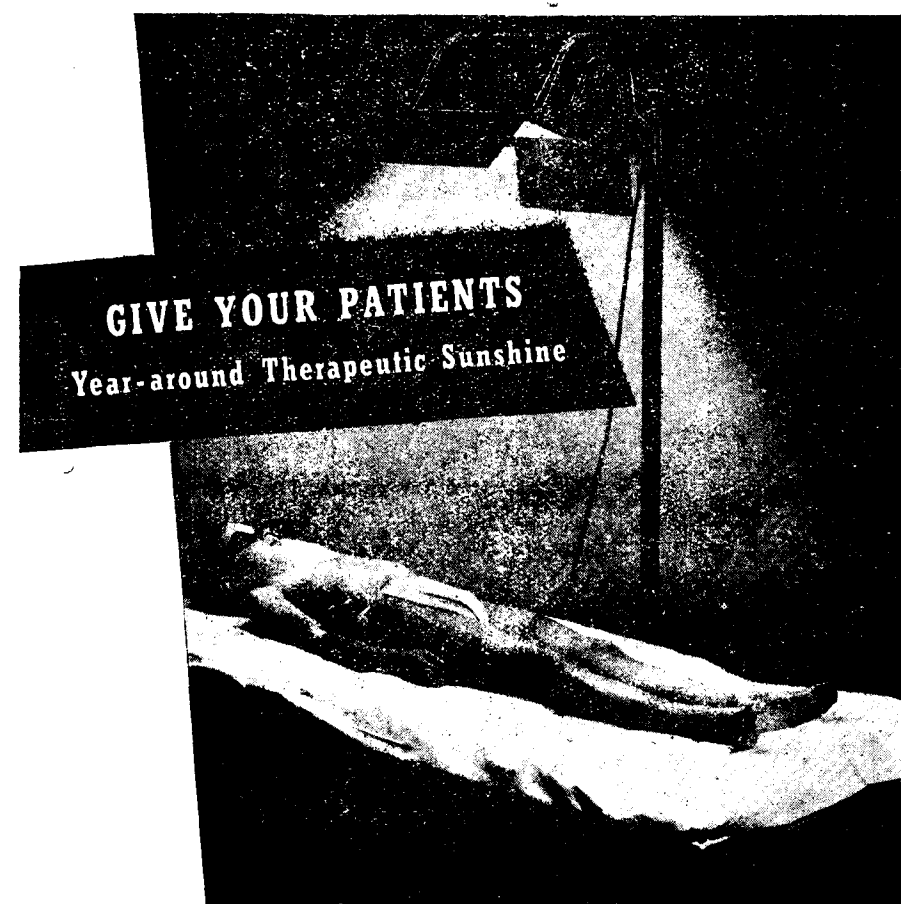
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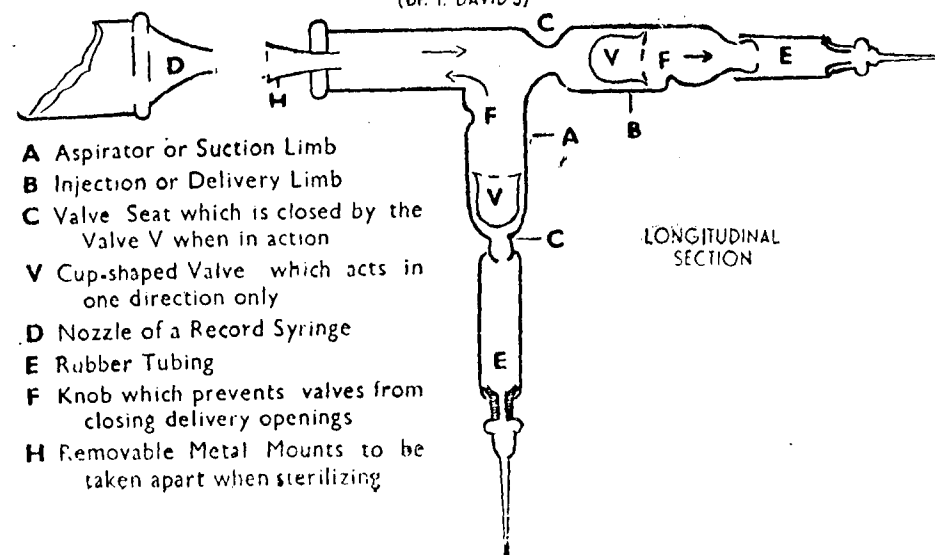
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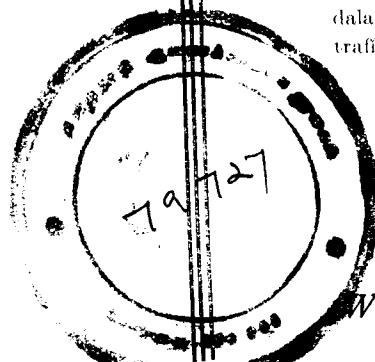
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