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The
Madras Medical Journal
Vol. 15 NO. 2

April - 1953.



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Lm 211, N26M4
N33.15.2
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The Ounce of Prevention

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PNEUMONIA can often be prevented by the prompt and energetic treatment of bronchitis and grippe.

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THE MADRAS MEDICAL JOURNAL.

Vol. XV

APRIL 1933.

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B. T. and quartan infections reveal their nature by almost a classical periodicity. Tropical Malaria may mimic many other forms of pyrexia; and as the disease is really dangerous when treated tentatively or expectantly under the idea that it may be some other form of pyrexia, every effort should be made to discover any parasites present in the blood.

The parasites of Tropical Malaria, unfortunately have a habit of disappearing from the peripheral blood stream when we most require their presence there for identification. Or they are so few, that several films have to be very carefully examined before one comes across a parasite or two. Personally, I have a preference for the thick drop method. In chronic infections one has often to take blood several times for examination to discover the parasite. It is well-known that unlike other forms of malaria, the plasmodium of the tropical variety spends most of its life in the internal viscera.

Case I.—A middle aged woman, an inhabitant of Irinjalakkuda, 14 miles south of Trichur, was suddenly taken ill with high fever on the 21st day after her delivery. As Irinjalakkuda has been regarded as free from malaria, the presumption was against that infection. Late puerperal sepsis was considered, but an examination by the local doctor disclosed no lesion for Sepsis. However, he examined a film of blood, and found leucopaenia? (I must parenthetically state here, that the mention of a leucopaenia or leucocytosis, by the ordinary practitioner, after a casual examination of a film, must be taken with considerable caution. He sometimes wants to give some result of his labours in this direction, out of deference to his profession—and his statement may be far from correct). No malarial parasites were found. Within 24 hours, the woman grew restless, delirious and sleepless. Her speech became indistinct. For about a week, the temperature kept running between 104° and 102.5° , the general condition persisting. It was regarded as an atypical typhoid. Unfortunately, there is no equipment in the Cochin State for a cultural or serological diagnosis of Typhoid fever. I was called in at midnight on the 8th day, and I found the patient lying limp in bed with a muttering delirium, hardly conscious. Temperature 102.5° ; Pulse 120; Tongue coated; spleen not palpable; abdomen tense and tympanitic; heart, nothing special; lungs suggestive of a broncho-Pneumonia. It was impossible to make a diagnosis on the spot. As I examine the blood of all those cases,

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that come under my notice as a routine measure, I took about half-a dozen films and stained and examined them. I drew blank on five films, but discovered two malignant forms after a long search in the sixth. This case progressed satisfactorily so far as the fever was concerned; but the woman developed aphasia, which persisted for a few days, followed by indistinct speech. It took some days for her to get back her power of proper articulation.

I have seen two other cases with aphasia, in the Hospital under my charge, both presenting similar symptoms as already mentioned. The quinine controls the fever, and the patient passes from a muttering delirium into incapacity for speech, which takes some weeks for complete recovery. Some of my colleagues have been telling me that that they too have had cases, in which a striking symptom after the subsidence of the fever was aphasia.

In such a case, there is every likelihood of the disease being mistaken for encephalitis after influenza or encephalitis after salvarsan, or even paralysis or syphilis of the brain. Unfortunately malaria also gives a positive Wasserman. In such a case an examination of the blood may show a striking increase of the Monocytes, as much as 60 or 70 per cent., and then malaria ought to be always considered a probability.

Case II.—A male patient about 50 years of age was brought to the hospital, about 24 hours after the onset of high fever. The history showed that he had a severe blood spitting about 8 hours after the fever started. When he came to the hospital he had bleeding from every mucous surface; he vomited blood, spat blood, passed blood by the rectum and in the urine. He was perfectly conscious; but had moderately high fever (103.5°) and had a small thready running pulse. There was hardly any enlargement of the spleen. He did not come from a malarious locality, nor had he malaria before. A blood-slide was taken in the evening, but could not be examined till next morning. The patient passed away a couple of hours after admission into the hospital. The film of blood, under the microscope showed large number of malignant tertian parasites.

My assistant suspected Scorbutus, but there was no bleeding from the muscles: Acute leukaemia was suspected, but there was no

enlargement of the spleen or gland. In Black-water fever (not at all common in the Cochin State) there is Hæmoglobinuria, Icterus, and frequent vomiting. None of these symptoms were present; and the diagnosis would have remained in doubt, but for the examination of the blood.

I have seen two cases of intractable neuralgia of the superior maxillary nerve, in which the only history available was that the patients have lived in malarious tracts. In both cases, occasional bouts of fever lasting for a day or two occurred, but as they were accustomed to get this fever off and on, they made light of it. Moreover, they lived too far away to enable me to take their blood when the fever came on. In the one case, a European lady the insufferable pain had to be subdued by alcohol injection, into the foramen, through which the nerve issues. In the second case, the patient gave a history of syphilis a few years ago, and was consequently put on mercury and Pot. Iod. He refused any injections. There was some relief (!), but one day he rolled into my consulting room with moderate fever. A blood slide was immediately taken, and disclosed a few parasites of the malignant type. He was immediately put on quinine; and though the relief was not striking, he completely recovered in a few weeks after persistent treatment.

Case III.—A young boy of 10 years has been suffering from fever off and on for 4 months. He came from a locality on the sea-coast where malaria is said to be very uncommon—when I saw him, he was very pale, had an enlarged hard spleen, palpable glands in the neck, axilla and groin—which were hard and larger than normal. He had fever of a 102°; a blood slide showed no parasites. For a few days afterwards, there was no fever, and then the temperature shot up to 103°. Another blood slide was taken and after careful searching a male and a female crescentic gametocyte were discovered, but no asexual forms. He was given the usual treatment, with quinine supplemented with Quino Plasmochin, and was discharged perfectly cured.

I remember another case of a young man, who was treated for enteric fever, by a local practitioner. There were three other cases of fever in the same house, at the same town, simulating Typhoid, and two of them recovered; the other died in the 22nd day of the disease. The immediate cause of death is not known. The patient under

Some Rarer forms of Tropical Malaria

consideration had been having fever for 24 days when I was consulted when I saw him he had low fever ranging from 100—105·5, a palpable spleen, diarrhoea, tympanites, and had lost the sight of one eye due to iritis and keratitis, with perforation of the cornea. As the house of the patient was situated in a locality, where I had treated patients for malaria, I thought I would examine the blood and took slides accordingly. I had not the slightest idea that I would discover any malarial parasites in this case; but to my astonishment I saw two malignant T. parasites in the first slide I examined. I have reasons to suspect that the other patients also were suffering from some form of malaria. They were getting Burney Yeo's Quinine and chlorine mixture right through, and the recovery of the two may be due to the persistent use of quinine for a long time.

These experiences show that routine blood-examination, several times if necessary is an absolutely essential measure in all cases of pyrexia. It is sometimes fatal to feel complacent over a so-called "non-malarious locality," for in India at any rate, one hardly knows which locality is non-malarious. With all respect to our local Health-departments, I regret to say that no work has been done in this direction. A single examination of a single film of blood may lead nowhere. I would suggest at least one film and a thick drop, for thorough examination, and a reliable stain, capable of staining the plasmodium should be used. The preparation of the stain should be done by the medical man himself, and not by the compounder as in some hospitals. I can very well remember my assistant pronouncing slides negative, stained by our hospital stain, in several of which I have been able to discover the parasite, when stained and examined at home.

Notes on Genito-Urinary Surgery..

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

I. A short history of the development of urinary surgery.

The earliest specimen of vesical calculus was apparently the one discovered by Professor Elliot Smith in the grave of a prehistoric Egyptian at El Amara. There is no mention of vesical calculus in the medical literature of Ancient Egypt.

There is no doubt that in ancient India bladder-stone was known, for the operation of supra-pubic lithotomy was described in Ayurveda before the Christian Era. Hence Indians anticipated Franco, Douglas and Cheseldon by more than 15 centuries. The writings of Charaka, Susruta and Vagbhata who lived about the 2nd, 5th and 6th centuries, A. D. contain descriptions of the disease and indications for treatment. The operative treatment for vesical calculus must have been in vogue for many centuries before these writers. They describe four types of vesical stones, viz., white stones (the modern phosphatic stones), rough and spiny stones (oxalate stone), dark brown or bile stained stone (uric acid stone) and sperm stones. The last "the sperm stone" is apparently prostatic stone. They took the prostate as a spermogenic organ. Susruta describes about 121 surgical instruments and has described operations as amputations, rhinoplasty, etc. He has described a perineal lithotomy by a lateral incision and without the use of a staff. The ancient Indian surgeons were scrupulously clean and instructions on boiling of instruments, cleaning of hands, etc., were laid down. Students were trained to operate first on plants and then on animals as a preliminary training to operative work on human beings. Hippocrates (460-370 B. C.) recognized both renal and vesical calculi and has given descriptions of signs and symptoms, but he never operated for bladder stone and advised his followers to leave these cases to the 'itinerant specialist'. But Hippocrates cut down for perinephric abscess, and exposed the kidney but never cut into it for stone. These cases of bladder stones were left in the hands of itinerant lithotomists. Owing to this teaching of Hippocrates not to cut for stone, no further advance in stone-surgery was made in Europe for about 2000 years with a few

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exceptions. Celsus of Rome in the first century A. D. practised perineal lithotomy by lateral incision without the use of a staff. He gives a description of how to perform it. The stone is brought down to the neck of bladder by manipulation with two fingers of left hand in the rectum and the right hand above the pubis. After fixing it at the neck it was cut down upon and removed, by a hook. He also describes catheterization with an S-shaped bronze catheter. But his writings had little influence on the other physicians of his time and the operation was solely left to itinerant lithotomists. Galen (2nd century A.D.) wrote against operations for stone and advised solvents for stone. Hence surgery fell into the hands of itinerants:—cataract extractors, heriotomists and lithotomists who had little experience of animal surgery.

Rise of Arabic culture.—Rhazes and Avicenna, both well known physicians of Arab Renaissance, gave good descriptions of lithotomy and its dangers but apparently did not practice it. Avicenna improved the catheter and practised bladder lavage. Albucasis a well known Arab Surgeon of Cordova (11th century A. D.) practised lithotomy and modified the instruments. Arabs were the first to introduce the system of building hospitals for the public on large scale. In 707 A. D. one was built in Damascus and later at Bagdad, Cairo, etc. The most famous was at Muristan built by Sultan Kalaun of Cairo in 1283, and had an endowment fund.

Lithotomists.—Surgery of stone was left in the hands of these itinerant lithotomists in the time of Hippocrates and though some of the Greek Physicians of Rome practised the operation, majority of cases were left in the hands of the lithotomists. Who exactly these wandering lithotomists were is not known. There is however evidence that both supra-pubic and perineal lithotomy were practised in India, even before the Christian Era. It is very likely that some expert lithotomists of India migrated with the returning Greeks after Alexander's invasion. If they had been local people mention of them would have been made and the art practised more generally than it was at that period. As a matter of fact lithotomy was restricted to a few families and kept a secret and no improvement in perineal lithotomy took place till the 16th century. Supra-pubic operation was unknown in Europe at that time.

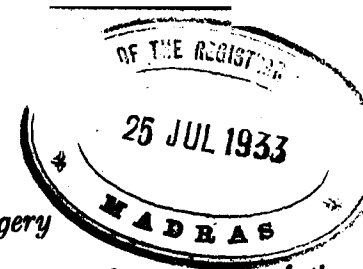
In the 16th century Marianus Sanctus first practised perineal lithotomy with the use of a staff and described it. In the same century

Pierre Franco performed a supra-pubic lithotomy in a boy owing to difficulty of removal of a stone by the perineal route, but he never repeated it and advised against this approach, owing to danger of wounding peritoneum which was much more likely owing to struggles of patient during operation in those pre-anaesthesia days. He also operated for hernia and cataract. He operated for the first time a strangulated hernia. The Collot family practised this art for eight generations and in the 17th century this family established a hospital for stone-in-bladder in the Faubourg Saint Antoine. For two centuries this family had a practical monopoly of the operation and it was kept a secret handed from father to son.

Frere Jacques in the latter half of 17th century introduced a modification by using a lateral incision, passing between the erector penis and ejaculatory urinae exposing the prostate and neck of bladder and cutting into it, avoiding main blood vessels altogether. This resembles very much the Susruta incision. John Douglas of Westminster Hospital was the first English surgeon to perform the supra-pubic operation and Chesseldon of St. Thomas's hospital also performed it about the same time. The latter however developed the perineal lateral lithotomy and in 1727 published a book on lateral operation on stone improving Frere Jacques' method. This remained as the operation of choice till displaced by lithotripsy and supra-pubic lithotomy. John Douglas improved and practised the supra-pubic operation. The want of general anaesthesia rendered this operation more difficult and delicate and hence fell into disuse. After the introduction of general anaesthesia supra-pubic operation came into prominence again. Morand introduced the operation into France in 1727 and introduced the 'Trandelenburg' position for the operation to avoid the peritoneum.

Frere Come (Jean Baseilhac) was the greatest of the itinerant lithotomists. He joined the order of Franciscan Monks. In 1753 he opened a hospital for stone in Paris where he and his nephew operated on more than 1,000 cases of stone in the bladder.

It was only in the 18th century that the general surgeons took to bladder operations also. Stones were a fairly common condition in Europe in the 18th century and special hospitals were opened in the larger cities. At this time secret remedies for dissolving stones in the bladder had sprouted out in large numbers and the ignorant public were



properly mulcted. Joanna Stevens remedy was one of these and was bought by the British Parliament for £5,000 and the powder consisted of powder of old clay tobacco pipes egg shells, soap, white onions, burdock seeds, etc!. That was the era of quacks in England. A tailor became an oculist and was Knighted! Mrs. Mapp a bone setter drove in a chariot and four (the old representative of "eight-cylinder sedan" car of modern times)! In the present Renaissance of India similar secret remedies are so valued by the gullible public that they have a wide sale and their owners live in palatial buildings and drive in eight-cylinder sedans.

Lithotripsy.—The lithotrite was developed out of an instrument introduced in 1823 by Civiale. The screw mechanism was introduced by Hodgson of Birmingham. Sir Henry Thomson strengthened the instrument and made the female blade fenestrated. Sir Philip Crampton of Dublin introduced the first suction apparatus in 1846. Bigelow in 1878 improved the locking device of the instruments and introduced larger evacuating canulae and the rubber evacuator. Frayer improved the instrument still further by combining the Thomson blades and Bigelow handle and the locking device and the modern instrument remains practically the same. Keegan and Frayer popularised lithotripsy operation in India. Keegan had a smaller size constructed for stones in children. The modern improvement on this is the Cystoscopic lithotrite of Canny Rayal in which the stone can be crushed under vision by the presence of a telescope along the shaft.

Nephro-lithotomy.—Morris was the first to perform nephro-lithotomy in 1880, and Beck performed pyelotomy in 1881. MacIntyre was the first to make a positive diagnosis of stone by X-rays in 1896.

From 1900 onwards, rapid advances in genito-urinary surgery have taken place both in methods of diagnosis and treatment. Nitze introduced the cystoscope in 1876 and it has undergone improvements to a great extent. Its modifications have helped greatly in diagnosis and treatment. Retrograde and intravenous methods of pyelograms have been of fairly recent origin. Bio-chemical examination of blood and urine have improved to such an extent that they are invaluable to the genito-urinary surgeon both for diagnosis and prognosis of his cases.

The Clinician and the Laboratory

By

S. RAMAKRISHNAN, L.M.S., L.R.C.P. & S. (Edin.), D.T.M. & H. (Lond.),

Professor of Bacteriology, Madras Medical College.

The first essential step in the management of disease—diagnosis—is the most important function of a practitioner. Whether he is the last of a host of advisers or the first of many to follow, whether the patient will be directed towards the restoration of health or carried into the blind bye-paths of symptomatic treatment is dependent upon the ability of his adviser to recognise the nature of the ailment. To this end greater or less study may be required and specialised methods of examination may be called upon to elicit the necessary information.

The extraordinary advances of modern times in the elucidation of the ætiology of disease, the tremendous strides made in the elaboration of methods for the study of the effects of disease, have added greatly to the diagnostic armamentarium.

Few divisions of medicine—by which I mean all that has to do with the recognition and management of disease—have undergone more extensive or more constant changes in recent times than that which concerns itself with the laboratory investigation.

But the very number of these newer methods applicable has produced an embarrassment as a result of which, sometimes they are neither wisely used nor intelligently interpreted, so that the introduction of laboratory procedures in the study of disease, has somewhat paradoxically contributed difficulties rather than assisted in their elucidation.

There are many reasons which may be looked to for an explanation of this situation.

First is the common tendency to look upon laboratory procedures as tests. To think of them as indicating the presence or absence of specific pathological condition,

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Laboratory procedures should be looked upon simply as *methods of examination*, methods designed to secure information attainable in no other way, methods for the detection and measurement of the response of the patient to various stimuli.

The application of a stethoscope to a chest is not a test for tuberculosis. The stethoscope is applied to hear plainly such sounds as may be produced in disease. Unless the sounds be heard, their mechanism understood, they cannot be translated into a diagnosis of tuberculosis or of pneumonia.

In the same way, the results of an agglutination reaction or the complement fixation test do not depend upon the mere presence of the disease but upon the reactions of the patient's mechanism to the stimuli produced by the disease.

In other words both kinds of examination require *interpretation*, if they are to furnish correct information, and their correct interpretation depends upon a thorough understanding of the mechanism involved.

Though it is not essential for the practitioner to be familiar with the technicalities of the different laboratory methods, it is essential for him to be thoroughly familiar with the significance and clinical interpretation of their results.

Without under-rating the value of laboratory aids in diagnosis, the tendency to rely on them, to the exclusion of thorough personal examination, is to be deprecated.

Too much dependence on laboratory aids leads to lack of care in other methods. The laboratory should be relied on to assist or confirm a diagnosis, rather than to make it.

The tendency nowadays is far too much attention being paid to laboratory results. The laity is more satisfied if a diagnosis of Enteric is made by the laboratory rather than by the clinician.

Laboratory diagnostic procedures are legion and I shall restrict myself to the consideration of a few of them.

Widal.

The occurrence of a positive widal reaction has but one clear cut meaning namely that the serum contains agglutinins for the typhoid bacilli.

A positive widal may signify that—

1. The individual has typhoid fever.
2. He has had typhoid fever.
3. He has received anti-typhoid vaccine.
4. He is a carrier of the typhoid bacilli.

In the differentiation of these possibilities, not only must the other clinical findings be taken into account but also the dilution of serum in which agglutination occurs.

I am of opinion that the best way to apply the widal test to the diagnosis of typhoid fever is by repeating the test after 5 or 7 days. An increasing agglutinating content or a rising titre is evidence of continued agglutinin production which is only possible in the presence of typhoid bacillus.

The production of agglutinins requires a certain period of time. The incidence of positive reaction therefore varies in accordance with the duration of disease, and also with the ability of the patient to react.

Occasionally however, a positive reaction may not occur until the patient is well on the way to convalescence. In the patient who has a past history of typhoid fever or who has received anti-typhoid vaccine, a single positive widal reaction has no diagnostic value. It is here that repeated tests are of value.

For reasons not yet satisfactorily established positive widal reactions may be encountered occasionally in other diseases, but they are usually in low titre.

The agglutinin titre bears no relation to the degree of immunity and also has no relation to the severity of the disease. As agglutinins are a species of anti-bodies it was originally thought that they possess protective and curative powers, conferring immunity in proportion to their content in the serum. This however has been shown not to be

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the case. Relapses have occurred in typhoid fever when the agglutinin content of the patient's blood is at its highest level.

It is possible that the production of the agglutinin is associated with the concomitant production of other anti-bodies more directly protective. The mere fact that an individual's blood contain a large number of agglutinins therefore is not necessarily an indication that he is effectively protected, nor can they be taken as a direct measure of the degree of immunity.

The culture of *B. typhosus* obtained from the blood of a patient is certain proof that he is suffering from typhoid fever.

A positive or negative widal by itself is of little value in diagnosis unless all the facts of the case are known, and the physician in charge alone can rightly interpret the significance of the reaction, for not infrequently a patient giving a positive widal is not suffering from enteric fever at all, whilst one who gives a negative widal reaction is in reality suffering from the disease.

A laboratory can only say that a widal reaction is positive or negative but can never give the diagnosis that a patient is or is not suffering from typhoid.

Bacterial Blood Cultures.

In many Protozoal infections, parasites appear in blood as to be readily recognizable.

Few bacterial blood infections can ever be recognised by this simple technique.

Cultural methods are essential for the effective diagnosis of septicaemic infections in general.

The circulating blood of a healthy individual is sterile. Organisms constantly enter the blood stream; but in a state of health, the bactericidal power of the blood and the filtering property of the reticulo-endothelial system will remove them. It is probable that even in severe septicaemia, little actual multiplication of the organisms takes place in the circulating blood. But a positive blood culture is usually an evidence of a severe generalised infection.

If we remember that a cellular reaction demonstrable in the spinal fluid is an indication of inflammation of the tissue bathed by the fluid then the cell count when combined with clinical probabilities is most valuable aid to diagnosis.

But however valuable cell count is, it can never be used for specifically diagnosing a given disease. Many have quoted figures as diagnostic of, say, tuberculosis or syphilis. This is entirely fallacious; each case must be considered on its merits and from all aspects.

In acute pyogenic infections of the meninges, the cellular reaction will always be of a gross nature. The turbid fluid will contain thousands of polymorphs per c. mm. Such may be found in infections with meningococcus, strepto, and pneumo. Tuberculous meningitis is a process in which the cellular reaction is somewhat variable. In acute and fulminating infections, the fluid is usually cloudy and contains hundreds of cells per c. mm. (polymorphs). In more chronic infections, the cellular content is not high and from 50 to 60 cells are lympho. All grades of tuberculous infections may be met with.

In syphilitic infections, the cells may number a hundred or more or they may be as low as 8 or 10.

Encephalitis Lethargica, acute anterior poliomyelitis and a few other less defined central nervous system diseases sometimes have a meningeal involvement. This occurs mostly in the very early stages—very variable—may be absent altogether.

The intrathecal administration of serum frequently causes an irritation of the meninges leading to an increase in lymphocytes.

Bacteria.—In purulent specimens bacteria are usually visible in a stained film of the deposit. Meningococci however are often difficult to find. Cultures should be made of all specimens containing an increased number of cells and if meningococcus is to be cultivated, the culture should be made by the bed side and incubated at once.

Tubercle bacilli are not commonly found.

Wassermann reaction.—It is always worth while to do a Wassermann test of the spinal fluid in any obscure nervous lesion. A test of the blood serum should be made at the same time.

Lang's colloidal Gold test.—This test depends upon the fact that abnormal protein constituents in the spinal fluid have the power of precipitating gold from a colloidal solution. This test is useful in differentiating early cases of General paralysis from Tabes dorsalis.

Chemical constituents.—The most important is the determination of the chlorides. These are generally reduced in tubercular meningitis.

Genito-Urinary Infections.

Urine.—A catheter specimen affords the only reliable positive information as to bacterial infection at any point higher than the urethra. It is reasonable argument that if an ordinary specimen contains no bacteria, then a catheter specimen certainly will not. The preliminary examination of a cleaned-up mid-stream specimen is therefore a useful procedure and if negative is entirely reliable; but if such a specimen contains organisms, then catheterisation must be performed. The first morning-specimen supplies most information and is in all cases the only specimen of any value for quantitative and comparative work. Specimens should be examined as soon as possible after collection. If there is undue delay, delicate organisms tend to die out, pus is liable to disintegrate and become unrecognisable, whilst in hot weather Coli form organisms may so multiply that the number present gives a false idea of the severity of the infection.

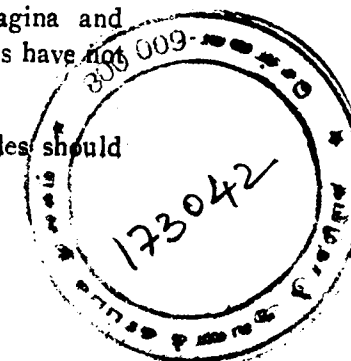
Males.—Mid-stream specimens are however relatively satisfactory as an index of infection of the bladder and higher parts of the urinary tract.

In all males over 50, a catheter is advisable owing to the frequency of mild and chronic B. coli infection of the prostate.

When an examination for tubercle bacilli is required it is always preferable to use a catheter.

Females.—It is almost impossible to ensure that an ordinary specimen of urine is uncontaminated by the numerous vagina and vestibular bacteria, or that pus epithelium, blood or mucus have not been derived from the genital passage.

For bacteriological examination all specimens from females should be taken with a catheter.



Child and Infants.—The examination of a cleaned-up specimen may well precede the passing of a catheter.

A 24 hours specimen is only of value when examining for tubercle bacilli. With such a specimen, a large quantity can be centrifuged with a greater chance of finding the bacilli.

Cultures of urethral discharge are best made by experts. Where this is not possible, clean the glans with a little spirit, wipe away the first drop of discharge and take a loopful of the next drop avoiding touching the meatus. The cultures should be made on Hydrocele Agar and incubated without delay.

In Gonococcal cases, it is useless to submit a specimen of a vaginal discharge. Smears and cultures must be made from the urethra and from the cervix. The cervix must be mopped up through a speculum and the specimen taken from the mouths of cervical glands. The most productive specimens are those taken when the cervix is congested during the pre-menstrual period.

General Principles for the Interpretation of reports.

The presence in the urine of small numbers of cells or of organisms does not necessarily indicate a pathological condition.

Large amount of pus indicates acute condition. Deposits consisting of numerous epithelial cells suggest chronic catarrhal infections; whilst numerous bacilli without cells are associated with long-standing symptomless infections.

Of bacteria, *Staphylo albus* and *Diphtheroid* bacilli derived from the meatus may find their way into a specimen during the passage of a catheter and yield a growth on culture.

A question frequently raised is.—Whether the finding of one or two definitely pathogenic bacteria in a catheter specimen of urine may not be due to the power of kidney of removing organisms from the blood stream. It is believed that a healthy man will not pass micro-organisms. The presence of Tubercle bacilli in the urine always implies a tuberculous lesion of the kidney.

Microscope is the only instrument suitable for the examination of a urinary deposit—the detection of pus by macroscopic appearance, the KOH or ozonic ether test, is extremely unreliable and the Guaiacum test for blood is ludicrously insensitive compared with the detection by the microscope.

B. Coli.—Is particularly associated with Pyelitis in women and children, but in adult males it is much more suggestive of Cystitis or Prostatitis.

In Pyelitis the clinical condition usually shows marked improvement long before the urine ceases to contain organisms.

Cystitis is suggested when the specimen of urine is obviously offensive and contains mucus and bladder epithelium, as well as pus and *B. coli*.

A. B. coli infection is frequently complicated by additional organisms. Further a tuberculous infection is frequently complicated by a secondary invasion with *B. coli*.

As to treatment *B. coli* is sensible to sudden changes in the reaction of the urine; the alternative switching of the urinary reaction from the acid to alkali definitely helps to eliminate the infection.

The results of vaccine therapy have been very erratic; nevertheless many cases are obviously benefited even when vaccine treatment has been employed as a last resort.

Treatment by vaccines should extend over a period of months or more. Autogenous vaccine is superior to Stock vaccines.

Staphylococcus.—A heavy staphylococcal infection is either the result of the passage of an unclean catheter or a super-imposed infection.

Streptococcus.—Always associated with lesions of the kidney which arise from the lodgment of organisms circulating in the blood. Infective endocarditis, acute septicæmia, acute tonsillitis, acute rheumatism, or heavy dental infection.

Tubercle bacilli.—In urine in numbers sufficient to be detected in a stained film of the deposit usually indicate that the lesion is extremely advanced.

Suspect Tubercle.—If the urine is acid containing a small quantity of pus with a few red cells, but with no bacteria demonstrable in film or cultures.

Guinea pig inoculation affords the earliest absolute positive evidence. A negative Guinea pig test is by no means conclusive for it is estimated that 10-160 living bacilli according to virulence and type must be inoculated into the animal before tuberculosis is produced.

Inoculation of a Guinea pig necessitates a delay which may last from 6 to 8 weeks.

Faeces.

When a practitioner seeks the aid of a laboratory in the examination of faeces certain conditions must be fulfilled if the result is to be of some value. Culture material and time has to be spent on the examination of the material and it is disappointing to submit a negative report.

It is equally disappointing to the clinician when he receives the negative report after waiting for 3 or 4 days; and it is equally misleading if the result is negative because the material sent for examination was unsuitable or arrived too long after collection.

There are certain routine investigation which a laboratory can make on a specimen submitted for examination; but an indication of the special features to be investigated in the way of a note as to the clinical condition of the patient, and the suspicions of the medical attendant will help materially in the methods of examination.

The material sent to the laboratory should be as fresh as possible. Most of the bacteria in formed faeces are always dead. It is preferable to work with a liquid or a semi-solid stool.

The best specimen is the fresh liquid evacuation following a saline aperient. Recently passed mucus is the best material for examination. The faeces should be collected separately from urine and no time should be lost in getting the specimen sent to the laboratory.

In all cases, the examination of a single specimen is never conclusive.

There are four great groups of bacteria normally present in faeces—coliform bacilli, streptococci, anaerobes and the acidophile bacilli.

In addition to the normal inhabitants of the bowel certain pathogenic organisms occur in disease—Typhoid, Dysentery, Cholera. **Tubercle.**—Typhoid group organisms appear in the stool from the 2nd week onwards. Though other methods of diagnosis are more reliable (Cultures of blood and widal), culture of the stools is useful as a control. The bacilli continue to be excreted in gushes, sometimes a patient though apparently well continues to pass enteric bacilli at intervals, becomes a carrier, and a source of unwitting infection to the rest.

It should be realised that the chances of finding the specific organisms of B. Dysentery are extremely small except in the early and the acute stages of the disease. If the specimens are sent for examination late in the course of the disease, it is more a matter of luck than skill if a laboratory can isolate a casual organism.

The usual bacteriological sequence in a case of dysentery is for the Dysentery bacillus to become scarce when once the acute phase has passed and for specific organisms to be replaced by abnormal coliform organisms most of which are non-lactose fermenters.

When interpreting a laboratory report of a case of ulceration of intestine, the significance of a large number of typical organisms is that they indicate a previous infection with a true Dysentery bacillus. Morgan, B. Asiaticus, B. Gartner.

Streptococci.—Form one of the important groups of normal intestinal flora and there are several varieties which may at times be pathogenic. The usual differentiation is by their action on blood corpuscles. The Non-Haemolytic variety is the commonest, and it is not usually pathogenic.

Tubercle bacilli.—The presence of the Tubercle bacilli will occur only when there is gross clinical evidence. Special methods of concentration with antiformin and inoculation of a Guinea pig may be necessary.

Vaccines from Faeces.

The value in treatment by vaccines made from the faeces, though widely assumed, is not proved by bacteriological criteria, does not rest on the same scientific basis as typhoid preventive inoculation or the treatment of Diphtheria or Tetanus with serum, nor has it the support of clinical proof.

In view of the great difficulties which confront one who attempts to assess the pathogenic significance of faecal organisms, no clear indications can be found for their use in vaccine therapy. Anti-bodies may be formed in a patient in whom they are injected but there are no means of knowing whether they have any specific action in helping the patient to resist his disease. Until further positive evidence accumulates, we have no warrant for using any but those derived from organisms with known pathogenic action.

At the risk of repetition a few short directions on the taking of specimens are summarised as follows:

Specimens forwarded for examination should generally be sent for a definite object, not in a vague hope, that the laboratory can take the place of a careful examination of the patient and in this way supply a clue.

Pus.—Identification of organisms accomplished by straining a film and by cultivation. Specimen should be fresh. Swabs from purulent cavities or sinuses are unsatisfactory. For making a good culture—the specimen should be moist and fresh. Stained smear preparations give an almost certain diagnosis in infection with (Staphylo, Strepto and Pneumo) gram positive cocci. The identity of Coli influenza and other gram negative bacteria can only be established by culture.

Tissues.—Appendix, synovial membrane, gland, pieces of bone etc., must be sent fresh. The specimens should be wrapped in sterile gauze or placed in sterile saline. Delay in transit prohibits a successful bacteriological examination owing to rapid development of putrefactive bacteria.

Effusions.—Serous effusions from the chest, abdominal cavity or a joint, should be submitted in two parts—one of which contains a citrate to prevent clotting. The unclotted sample—for examining cells and tubercle bacilli.

The syringe used for exploring should be sterilized by boiling in plain water; no alcohol or other antiseptic should be used for washing out the syringe.

Cerebrospinal Fluid.—When a lumbar puncture is made, the first few drops should be discarded—collected in a clean dry sterile test tube and examined without delay.

Delay results in inaccurate cell count, alteration in chemical constituents, and sometimes in death of contained bacteria.

Tubercle bacilli rarely found during life.

Urine.—For bacteriological purposes, the first morning specimen yields the most information. Catheter specimen is essential in the case of females. 'Cleaned up mid-stream' specimens are useful preliminary in males and children and if sterile the taking of catheter specimen is necessary.

In tuberculous cases, a catheter specimen entirely excludes any possible fallacies from the smegma bacillus. Tuberculous urine rarely contains Tubercle bacilli in any numbers until the disease is well advanced.

Faeces.—Fresh specimens are always the best. Specimens need not be of large bulk for bacteriological examination, but any definite piece of mucus or flakes of blood should be picked out and included in the sample. At least five or six daily specimens should be examined before accepting a negative result. Cultivation for pathogenic organisms such as dysentery and typhoid bacilli are successful in only small percentage of cases. Negative examination by no means exclude this type of infection.

Blood serum.—3 or 4 c.c. of blood drawn by vein puncture provide enough serum. Small quantities may allow of no margin for the repetition of a doubtful test.

A common error is to collect the blood in a syringe that has been washed out with spirit, ether or water. All these cause a certain amount of hæmolysis so that the serum is tinged with blood pigments instead of being clear; a hæmolysed sample is extremely unsuitable for a Wassermann test. Syringes should be washed out in physiological saline.

E. N. T.—The majority of specimens are in swab form and since many of the important pathogenic organisms from these sites are extremely delicate, it is important to have fresh samples. The taking of a good swab from the throat or post-nasal space requires experience, patience and skill. Swabs on malleable wire are the most convenient as they can be bent to any desired shape. West's swab is also useful.

If there is a definite membrane on the fauces, a smear made on a slide may well supplement the usual swab.

Ophthalmic Medicine : Diseases of the Conjunctiva.

BY K. KOMAN NAIR, D.O.M.S.,

Ag. Superintendent, Govt. Ophthalmic Hospital, Madras.

I propose to confine myself in this paper to a few of the common diseases of the conjunctiva and point out some of the important factors in their diagnosis and treatment.

Acute Conjunctivitis, or the common "sore eye" or "pink eye" contributes the largest number of eye diseases seen in any clinic—about 16 per cent of the cases in the Government Ophthalmic Hospital, Madras. A little more than half of this number is due to Koch-Week's bacillus infection, the remainder being largely due to the pneumococcus. The conjunctiva is congested; there is lachrymation, often profuse, and a moderate amount of photophobia; a discharge from the conjunctiva of mucoid or muco-purulent material is present. In severe cases there may be also oedema of the conjunctiva or even of the lids.

Examine also (i) the condition of the cornea for the presence of any ulcers—result of direct infection; and (ii) the eye for the presence of any secondary iritis—due to the absorption of toxins. Take a smear from the conjunctival discharge for bacteriological examination; we have to eliminate specially (i) a gonorrhoeal infection and (ii) a diphtheritic inflammation. The latter is very rare but must be kept in mind. In both these cases, the great importance is from the point of view of the prognosis and the likely serious complications that may follow; they also require immediate and energetic treatment with greater amount of personal attention.

The general lines of treatment are:—(i) *Frequent washes* to keep the eye free from discharge. Magnesium sulphate (30 grs. to i), Hydrargyri perchlor. (1 in 10,000) and normal Saline are the lotions commonly used. Hot bathing over the eyes is indicated, especially in cases where considerable oedema is present.

(ii) **Antiseptic drops**: Silver nitrate solution (3 grs. to 3i) once daily is the most efficacious. Argyrol, Protargol, Silvol, etc. are very mild and may be used in the later stages, when the condition is getting better. The silver nitrate applications should be neither too strong nor too frequent. Indiscriminate use of these should be condemned, as they are likely to produce argyrosis; hence avoid giving prescriptions of silver preparations for long-continued home use to patients. A 1 per cent solution of mercurochrome is also a good antiseptic. A 1 per cent optochin (drops) is useful in pneumococcal conjunctivitis.

(iii) **Mild ointment applications** (boric or pure vaseline) to prevent sticking together of the lids.

(iv) Treat complications, if any, such as corneal ulcers or iritis. In the latter case, do not continue the mydriatic any longer than is absolutely necessary.

Gonorrhoeal Conjunctivitis. Two forms have to be considered separately, i.e., those occurring in the newly-born and those in the adults. The latter variety is of a far more severe type with very often serious end results.

Ophthalmia neonatorum is one of the most common causes of preventable blindness in India. It accounts for 50 per cent of the blind children and 8 per cent of all the blind people in the United Kingdom. 25 cases were recorded at the Government Ophthalmic Hospital, Madras, in 1931. Prevention is most important and Crede's method of prophylaxis is the best. It must be rigorously adopted in all hospitals—a 1 per cent solution of AgNO_3 should be used. It must be the duty of the midwife or doctor attending a confinement case to watch the eyes of the babies for the first week or so for any sign of discharge, etc.

Treatment is as mentioned above for acute conjunctivitis, but irrigation of the eyes has to be done more frequently on account of the profuse discharge. Irrigating the conjunctival sac of an infant is difficult and one has to be careful in trying to open the palpebral aperture. If left to lay people (mother or relations) only an outside wash is usually given. One must take time over it, do it gently, but effectively. The mother and attendants should be warned regarding the infectious

nature of the discharge from the child's eyes and told about the precautions to be observed by them.

Gonorrhoeal ophthalmia in an adult is a very severe affection, which progresses rapidly, and quickly causes corneal complications; hence, immediate and energetic treatment with careful personal attention by the doctor or a trained nurse is required. In the early stages, smears taken from the conjunctival discharge may not show gonococci; gentle scraping of the conjunctival epithelium has to be made and this examined microscopically, before a negative result could be pronounced.

If only one is affected, the sound eye should be protected by means of a Buller's shield. In most cases there is intense congestion and oedema of the bulbar conjunctiva, which overhanging the circumference of the cornea, allows pus to collect in the folds and causes ulceration of the cornea; ulceration is also caused by obstruction of the lymph supply by pressure around the limbus. This oedema has to be relieved by scarifying the swollen conjunctiva, doing an external canthotomy, giving a smart purgative and, if necessary, apply leeches on the temple. Frequent washes to keep the eye clear of the discharge are essential; mag. sulph. lotion relieves the oedema very much; any saline wash will do ordinarily. Iced water compresses are useful during the first 24 hours; later, hot applications. As regards antiseptic drops, AgNO_3 (3 grs. to 3i) once daily and argyrol drops twice daily will be sufficient in early cases. Later, when the discharge is free, evert the lids, if and when possible, and give AgNO_3 (10 grs. to 3i), swabbing followed by a saline wash, on alternate days; at a still later stage, when the palpebral conjunctiva assumes a thickened velvety appearance, an occasional touching with Cu SO_4 stick is necessary in addition to the AgNO_3 (10 grs. to 3i). 1 per cent mercuriochrome drops is a good antiseptic, especially when the cornea is affected. Free applications of a mild boric ointment between the lids are necessary after each eye wash. Protein shock therapy is very useful in all gonorrhoeal cases and ordinary cow's milk (whole milk) boiled for 4 minutes and given subcutaneously is the best. Three injections of 5 to 10 c.c. should be given every other day for adults and 1 c.c. doses for infants. Cow's milk is far better than aolan, lactogen and other prepared milk products. Corneal complications are the rule in these cases and atropine should be given in addition, if cornea

shows signs of involvement; iritis and iridocyclitis are also met with as complications.

Phlyctenular conjunctivitis, occurs mostly in children who live in unhealthy surroundings, and are illnourished. Argyrol drops, calomel dusting or application of yellow oxide of mercury ointment and attention to general health are all that should be done.

Chronic conjunctivitis occurs in different forms and may be considered one by one:

(i) *Chronic catarrhal conjunctivitis*:— This may be (a) the late stage of a case of acute conjunctivitis, (b) due to a chronic pneumococcal infection from a neighbouring diseased lachrymal sac, (c) the result of a constant irritation of the eyes from dusty or smoky surroundings or exposure to too much glare, (d) the result of a continued eye strain or (e) the result of irritation from long continued use of certain drugs, i.e., atropine, eserine, etc. The cause should be discovered in all cases and suitably treated. Eye strain as an important causative factor should always be borne in mind. In certain elderly people, change of reading glasses may be required; sometimes it may be that the power of the lens has to be increased, while in other cases, the patient may have been wearing a stronger glass than is necessary. In young persons, errors of refraction will have to be properly estimated under a cycloplegic and necessary glasses prescribed. For local treatment, sedative antiseptic and astringent drugs are necessary, i.e., zinc sulph. acid boric, hazeline, adrenalin chlor, chloretone, etc.

(ii) *Angular Conjunctivitis or 'Morax' Axenfeld Conjunctivitis*:— This has a typical appearance in most cases and is often associated with angular stomatitis and nutritional deficiency. Zinc sulphate drops (2 to 5 grs. to 3i) and applications of a zinc oxide (10 per cent) and Ichthyol (2 per cent) ointment are indicated, in addition to general tonics. It is imperative that the local treatment should be continued long after an apparent cure, in order to prevent recurrence.

(iii) *Follicular Conjunctivitis*:— This condition should not be confounded with trachoma; there are uniformly arranged rows of follicles (like "strings of beads") more in the lower lids; it is seen mostly in children, and associated with hypertrophy of other lymphoid structures, such as adenoids, diseased tonsils, etc. There are no signs of

vascularisation of the cornea or cicatricial changes in the conjunctiva, even in long-standing cases, provided no drastic medicinal or surgical (crushing, etc.) treatment has been undertaken.

Local treatment is by astringents: zinc chloride or sulphate drops (1 gr. to 3i); copper citrate ointment (5 per cent); yellow oxide of mercury ointment (1 per cent). Eye-strain if present, should be relieved by correcting the errors of refraction, estimated with the accommodation paralysed; diseased tonsils and adenoids should be attended to. Tonics, such as cod liver oil and syr. ferri iodidi should be given.

(iv) *Spring Catarrh or Vernal Conjunctivitis*:—There are the palpebral, the limbal and the mixed varieties. The palpebral form is often mistaken for trachoma and treated as such without any benefit and often possibly made worse. The limbal form is often typical, but in early, or mild cases, care should be taken to see that it is not mistaken for phlyctenular trouble. Two important points in the diagnosis are the presence of eosinophilia in conjunctival smears and the severe itching of the eyes, complained of by the patient.

Protection from glare is essential; Crooke's glasses or Zeiss's uropunktal glasses may be used. Itching and irritation are relieved by the use of dilute acetic acid (10 gr. to 3i) and weak adrenalin drops (1 in 4000—10,000). Cusis's sedative antiseptic ointment is a soothing application. Iced compresses over the closed lids are helpful. Parathyroid and calcium may be given internally if calcium deficiency or endocrine disturbance is suspected. Radium has given good results in some cases; one has to be very careful about the method of application and its dosage. Late formation of cataract, due to radium, is to be feared.

(v) *Trachoma*:—This disease is one of the causes of the preventable, partial or complete, blindness in India. It forms about 3—4 per cent of the eye diseases treated in the Government Ophthalmic Hospital, Madras. There are several translucent follicles on the palpebral conjunctiva, in the fornices (mostly upper), on the plica semilunaris and on the caruncle. Difficulty of diagnosis is great in many cases; many other milder conditions are often mistaken for trachoma and treated as such. The diagnosis is certain if early vascularisation of cornea or evidence of cicatricial changes is present. In early cases it is

sometimes very difficult. Previous drastic treatment of a follicular conjunctivitis might have produced the trachoma-like condition. In such cases, it is advisable for a week or two to try mild treatment—simple astringent drops and yellow oxide of mercury or copper citrate ointment. Improvement with such treatment makes one suspect that the case is probably not one of true trachoma.

In acute cases, *i.e.*, when complicated with secondary infection, AgNO_3 solution (10 grs. to 3i) should be used on alternate days for swabbing the lids; on other days, weak astringent drops; hot bathing over the eyes and mild ointment applications are helpful. In chronic cases, use the roller forceps to crush the excessive granulations and then apply AgNO_3 (10 grs. to 3i) and CuSO_4 stick alternately on alternate days of the week. Special attention should be paid to the upper fornix, which is ordinarily neglected. The fornix may be exposed by ballooning it with novocaine and saline given as an injection. 1 per cent of yellow oxide of mercury ointment or $\frac{1}{2}$ per cent of perchloride of mercury ointment applications are useful. Applications of chaulmoogra oil are beneficial in the chronic cicatricial stages; it is a safe medicine that may be used by any general practitioner. Copper citrate ointment (5 per cent) or CuSO_4 drops (1 to 2 grs. to 3i) may be prescribed for home use. It should be impressed on the patient that even after an apparent cure, he will have to continue the treatment occasionally, at least once a week, for many months. A bad case probably requires attention throughout his life time. Excision of the tarsus and fornix is advisable in the late stages of the chronic disease, when the tarsus is badly affected, but the operation has to be done properly, so as to avoid a late entropion.

The complications and sequelae of the disease are (i) pannus and ulceration of the cornea which cause diminution of vision by the opacities formed after their cure and (ii) the effect of the cicatricial contraction, which may produce trichiasis, entropion and in bad cases symblepharon posterius and xerosis of the conjunctiva.

A few words may be said about the varieties of corneal ulcers secondary to conjunctivitis.

(i) *Catarrhal* ulcers, occurring in cases of catarrhal conjunctivitis, are found at the circumference of the cornea as small spots of infiltra-

tion, starting as points and later assuming a crescentic shape. They have little tendency to extend and usually run a benign course.

(ii) *Phlyctenular conjunctivitis ulcers* are small and superficial, and not necessarily marginal; they tend to extend deeply into the cornea and rarely laterally. They cause crater-shaped depressions and tend to perforate. Fascicular ulcers are a variety of the above.

(iii) *Trachomatous ulcers* are found usually at the advancing margin of the pannus, and rarely at the margin of the cornea.

(iv) *Ulcers in gonorrhoeal and diphtheritic conjunctivitis*, are purulent, extend rapidly and are severe in character; the infiltrated tissue gets necrosed rapidly and the prognosis in these cases is bad.

Proposals for a Free Socialist Medical Service.

(From the "Medical Officer", 4th June 1932, Pages 225—28.)

The research sub-committee of the Socialist Medical Association was instituted at the first meeting of the executive committee of the association held on Wednesday, 19th November, 1930.

The terms of reference of the sub-committee were "to produce practical proposals for a free socialist medical service."

Those appointed to serve on the sub-committee were: the President, Treasurer and Secretary, Drs. Salter, Forgan and Bushnell, with powers of co-option. Mr. G. P. Blizzard was appointed Secretary of the sub-committee, and Dr. Rickards and Mr. F. T. Jordan and Dr. Lawson Dodd have been subsequently co-opted members.

Commencing in December, 1930, meetings of the sub-committee have been held regularly once a month and since January, 1932, at fortnightly intervals.

Evidence has been submitted on behalf of the British Medical Association, the Medical Practitioners' Union, the standing joint committee of Industrial Women's Organisations and the National Association of Trade Union Approved Societies, Socialist Workers' National Health Council, the Women's Public Health Officers' Association, the British Dental Association.

For purposes of simplification the report has been divided into three sections:—

- (a) Principles that must be kept in mind;
 - (b) The ideal health service;
 - (c) The legislative and administrative changes necessary to bring into being such a service.
- (a) PRINCIPLES THAT MUST BE KEPT IN MIND.

In trying to work out in some detail the health service of the future, there are certain principles that have to be kept in mind.

(1) *A Preventive Service.*—The medical service of the future will have much more to do with the prevention of disease than has the medical service of the present. To-day we divide doctors into those who prevent and those who treat disease, and the latter outnumber the former by perhaps ten to one. It will be pointed out that by curing one disease others are prevented. This, of course, is true, but what is necessary is that every doctor shall have his mind directed into preventive channels and that this shall not be left entirely to a chosen few. Unfortunately, at the present time preventive medicine takes but a very small place in the curriculum of the medical student, and the laws of health for adults and children are hardly taught at all. The reason is, of course, abundantly clear. Medical students are taught to become efficient tradesmen, and for the ordinary practitioner the commercial value of a knowledge of preventive medicine is exceedingly small. No one pays his doctor to keep him fit, and very few people, except the mothers of young children, inquire of their doctors concerning the laws of health. There is so much diagnosis and treatment that the preventive side is largely neglected. All this will have to be changed. One of the chief concerns of every doctor will have to be the prevention of disease. It must be the business of the doctor to keep his patients well and to report anything he may notice amiss with his patients' environment at home or at work to the appropriate quarter. There must be much more propaganda by poster, lecture and instruction in schools. Moreover, persons must be encouraged to come to their doctors for periodic examinations, even when they seem to be quite well. Only in this way can doctors learn to recognise the earliest beginnings of disease.

(2) *The Service must be Free to all.*—One reason, at any rate, why people so rarely come to their doctor for a periodic examination or for information concerning the laws of health is that this costs money. There must be no economic barrier between the doctor and his patient. Efficient treatment depends on the earliest recognition of disease. The question of expense must not, therefore, be allowed to enter in at all, and rich and poor alike must be encouraged to take advantage of the services of the doctor directly they feel they need them. The medical examination of school children and of recruits for the Army has shown that, under the present system of private practice, an enormous amount of ill health and physical defects have remained undetected and therefore

neither prevented nor treated. The present dependence of the doctor on his patient is undesirable in many ways. It may prevent the doctor from giving wholesome but unpleasant advice; it may prevent his refusing to sign unnecessary incapacity certificates; it may make him more concerned about mere externals than an intimate knowledge of the science of his profession. There are many other reasons for making all the medical service entirely free. Modern methods of diagnosis and treatment are becoming constantly more complicated and elaborate and, therefore, costly. Further, not only are healthy people, who are capable of giving service by hand or brain, the most important of national assets, but unhealthy people are a national danger, for infectious disease when conveyed through them is liable to increase in virulence. Lastly, experience has shown that any service arbitrarily limited to the poor is liable to become inefficient.

If the medical service is free and all-embracing, it follows of necessity that it must be staffed by full-time doctors giving the whole of their services to the State. If all patients can obtain a doctor's help without payment during some part of the day, while they have to pay for the same service at another period, it seems certain that they will all consult the doctor during his free hours unless, of course, they have reasons to suppose that they are obtaining better treatment when the services are not obtained gratuitously. Such conditions are obviously not to be permitted, for it is clear that the State doctor must do his very best for his patient under all circumstances. Clearly, therefore, the State service must be a full-time one and free to all who care to take advantage of it.

(3) *Hospitals are Essential.*—Most operations are best performed in hospital, and many medical cases are better treated and nursed there. Sufficient hospital accommodation is also essential for maternity cases, and for mental and infectious disease. There are, in addition, a large number of cases which are much more satisfactorily elucidated when the patient can be under constant observation in hospital, and when the services of specialists and special apparatus are readily available for diagnosis or treatment. For all such purposes hospital accommodation must be provided.

(4) *The Team must be the Unit.*—It must be evident to all, such is the complexity of medical science, that no one doctor, however clever

he may be, can know all there is to be known about prevention, diagnosis and treatment of *all* diseases. In the medical service of the future a team and not the individual doctor must be the unit. The medical profession has suffered enormously in the past from "insulation." The doctor who works alone in competition with an opposition to other doctors is very liable to deteriorate professionally. This is not only because, if a busy man he has little time for study, but also, and perhaps more largely, because of the conditions of his work. He has earned the confidence and respect of his patients who rightly regard his word as law. They look upon him almost as infallible and it is all too easy for him to regard himself in the same favourable light. He knows little or nothing of what other doctors are doing, and therefore fails to realise his own insufficiency. Everything, therefore, that brings doctors together to talk over their cases, as they are sure to do if opportunity offers, is to be encouraged. The doctor is by nature a gregarious animal who gets on well with his colleagues, and the experience of the hospitals shows that if economic competition is eliminated co-operation is easy and natural. What is lacking in our health services to-day is above all else, organisation and co-operation.

(5) *A Choice of Home Doctor is possible under a State Service.*—

It is important not to under-estimate the psychological value of confidence. It is necessary to remember, however, that an institution or service can command confidence as much as an individual doctor, as is shown by the readiness of patients to submit themselves to operation or medical treatment in certain hospitals that they trust, although they may not know even so much as the name of any one member of the staff. It may, therefore, be in the interest of the patient to have the power to select his own home doctor. As free a choice of doctor is possible under a State service as under the present. Unless a practitioner is permitted to become over-worked and therefore, inefficient, it is impossible for him to deal with more than a certain number of patients, and this applies equally whether he is in private practice or a whole-time State official.

(6) *The Doctor must be at the Service of his Patients.*—The present medical services appear to be organised, in so far as any organisation exists at all, on the assumption that the supply of doctors is strictly limited, and therefore the time and convenience of the doctors are the

only things that matter. As there are at present no maintenance scholarships for the medical profession, no parent can make his child a doctor unless he is able and willing to provide for his maintenance until he reaches the age of at least 22 or 23. It follows, therefore, that at the present time the medical profession is recruited almost exclusively from a small portion (about a sixth) of the population. By providing maintenance scholarships to enable boys and girls from the secondary schools to obtain a medical qualification, the State will be able to increase the number of qualified doctors to any required extent. The doctors of the future State service will see their patients largely by appointment and the present long waits will be avoided. A qualified doctor must be available at all times in all hospitals and must attend with the ambulance in the case of street and other accidents.

(7) *The value of Medical Records.*—While it is admitted that every family should have a home doctor to act as guide, philosopher and friend, it must not be forgotten that a doctor's memory may be defective, and that both patients and doctors may change their place of residence. Therefore, it is of the greatest possible importance that a medical record shall be kept of everyone and that every event of medical significance, from birth onward, shall be entered by the doctor who sees a patient. Medical records should be kept in duplicate in the health centre (see later) and passed on when residence is changed.

(8) *The Conditions of Service must be Satisfactory.*—If medicine is a science it must be progressive. The fact that in the past the main discoveries of medical science have been made by the specialist in hospital, and not by the general practitioner, does not indicate that there exists an essentially different type of mind in the two types of doctor. It indicates that the conditions of service—the atmosphere of co-operation rather than competition—of the specialists are more favourable. A greater output of research work, as well as better work generally, is to be expected from the future State Practitioner working in full accord with his fellows. And because this is to be expected of him, he must be given freedom, freedom to adopt his own methods of treatment, freedom from lay interference in his medical work, freedom from too many clerical duties which latter should be entrusted to a secretary. Facilities must also be provided to make easy the passage from one branch of the service to another for those who desire a change and show capacity for new duties. Moreover, while increasing specialisation is inevitable, it

is essential to provide sufficient variety of work and duties, so that the doctor does not become a mere machine. And lastly, the conditions of service such as pay, pension, holidays and study leave, must be sufficiently good to attract the best men and women to the service, and good brains to the profession.

(b) THE IDEAL HEALTH SERVICE.

In this section an attempt will be made to describe what in the present state of our knowledge may be considered the ideal health service for a county such as ours. But in discussing such a service we must be strictly practical. We must consider what is possible as well as what is desirable and we must be sure that we are getting really good value for what is spent on the health needs of the populace.

The object of the medical service of the future will be to put every advance of modern medical science and specialist treatment as well as skilled nursing freely within the reach of all. The service must be so efficient and so well organised that everyone, rich and poor alike, will be ready to take advantage of it.

Administration.—The health service of the future will be administered by local authorities, supervised by the Ministry of Health, which will have charge of all the health centres of the nation. The ministry must, however, use to a much fuller extent than at present the powers that it possesses for compelling reactionary local authorities to carry out their statutory duties, and many duties that are now optional must become obligatory.

The unit of local administration must be large. The ideal unit would appear to be a regional one consisting of one or more large towns with the district around each for about ten or twenty miles in all directions. Unless, however, considerable changes in local government take place, the administration of such a unit would present such difficulties that it would be better to create for health purposes a new authority by taking the county, including all county boroughs and other local government areas contained therein, as the unit. For administration purposes small countries could co-operate either completely or for special purposes, and larger ones could be divided. For instance, Rutland might co-operate with Northamptonshire whilst Yorkshire and Lancashire might be divided into two or more health areas. All health

Proposals for a Free Socialist Medical Service

services will be financed by a geographical rate, aided by substantial grants in aid according to need and condition on the provision of at least minimal service. Grants in aid will be largest in amount when the population is relatively large and the product of a penny rate small. All the health services provided by the county will be under the charge of the county officer of health and administered by a central health committee, composed of representatives of the councils of the county and contained county boroughs in proportion to population. The central health committee will find it useful to divide itself up into sub-committees of which the following at least will be necessary :—

- (A) *Sanitary.*—Industrial health, sanitation, inspection of food and drugs, notification of disease, etc.
- (B) *Clinical.*—The work of the health centre.
- (C) *Hospitals.*—General, infectious, maternity and convalescent homes, together with the necessary ambulance services.
- (D) *Child Life.*—Infant welfare and health in schools.
- (E) *Mental Disease.*—Where the population of the area is large it may be advantageous to appoint an assistant county medical Officer of health to supervise the work of each of these sub-committee and especially the first, might find it useful to delegate to county boroughs, boroughs and possibly to district councils many of their functions while retaining powers of general supervision.

The services administered by each of these sub-committees will be now briefly described.

(A) *Sanitary.*—The industrial health staff will carry out inspection of all factories and workshops, and take steps to make certain that the health needs of all workers in them are catered for. They will also enquire into the cause of all diseases and serious accidents that occur in factories and workshops. Where the home doctor has reason to believe that the health of his patient is adversely affected by working conditions, he will report the matter to this department. The public health Acts dealing with sanitation, water supply, disposal of refuse, inspection of food and drugs, and notification of disease will be administered by this sub-committee, which will also undertake general health education by poster, sign, outdoor cinema, etc.

(B) *Clinical*.—It will be the duty of this sub-committee to provide curative treatment for all who need it.

- (a) In urban arrears the population will be divided into units of approximately 60,000 people, and all the curative services (except hospital accommodation (for each unit will be organised from a *health centre* situated as far as can be conveniently arranged at about the obvious natural centre of each unit. In some cases the health centre will be attached to a general hospital. The general practitioner service for each unit of approximately 60,000 people will be provided by a staff of *home doctors*, in the proportion of one to 2,500, people, and every person included in the unit will be able to select the doctor of his choice, provided the doctor's panel of 2,500 is incomplete. A very popular home doctor will, no doubt, have a waiting list for his panel, but, on the other hand, there will be many people who will express no preference and be ready to accept any doctor allotted to them. The home doctors will see their patients by appointment in the health centre or sub-centres and will also visit in their homes those who need their help.

It will be the duty of the home doctors to do their utmost to maintain and improve the health of those committed to their charge. They will, therefore, encourage them to come for periodic examination even when well; will instruct them in the laws of health and report any unhealthy conditions in connection with their patients, home or occupation to the sanitary or industrial health officials. At least one of the home doctors in each unit should be a woman. In the health centres specialists of all kinds (including those for tuberculosis and venereal disease) will see by appointment the patients referred to them by the home doctor. These specialists will also visit patients in their homes when unfit to attend at the health centre. In the health centres the medical records will be kept and health education by lecture and demonstration will be carried out. There will also be departments for child welfare, remedial exercises, light treatment and X-rays, as well as clinics for the study and treatment of early mental disease. In the health centres dispensing will be carried out by qualified pharmaceutical chemists. The ante-natal clinics staffed by specialists will also be situated in the health centres and the reports from these and all other

departments will be sent to the home doctors concerned as well as being entered in the medical records. From the health centres the district nurses and health visitors will carry out their duties.

- (b) In rural districts the numbers in the units of population served by each health centre will be slightly smaller, and attached to these centres in outlying districts will be clinics with two to four home doctors attached to each. These doctors will see their patients in these clinics instead of in the health centre, but will send on their patients to the health centres for specialist treatment. The home doctors in county districts will be responsible for the health of 2,000 instead of 2,500 people.

The Dental Service.—All available evidence points to the fact that, from the health point of view, constant dental supervision does really pay. It must be admitted, however, that dental problems not infrequently arise, the solution of which is by no means easy, and dental consultations are, therefore, necessary in many cases if the best results are to be obtained. Fortunately we may expect a considerable development of our road transport system in the near future, so that the connections between towns and villages will probably be a great deal better than they are at present. Consequently, while it will be useful for a dentist to attend at stated intervals at the outlying clinics, most of the dental work of the future will be carried out in fully equipped dental clinics in the health centres and hospitals by full time dentists, assisted by dental mechanics and clerical assistants. In charge of each of these dental clinics will be a dentist of experience, preferably with a medical qualification. It will be the business of the other dentists, before undergoing a line of treatment in all but the simplest cases, to talk the matter over with this officer who would, in addition to his consulting duties, undertake the treatment of patients.

(c) *Hospitals*.—All the experience of recent years seems to point to the conclusion that an increasing amount of sickness will be best treated under hospital conditions in the future. Therefore the ideal medical service will need to have associated with it a complete and co-ordinated hospital system. Further, it would appear that, with the exception of tuberculosis, infectious fevers and advanced mental disease, most illnesses suitable for hospital treatment are best dealt with in the wards of a

general hospital where the services of specialists in the various branches of medicine and surgery are readily obtainable and where any necessary pathological examinations can be carried out. All the hospitals will be closely linked together to form a single hospital system so that cases of special difficulty can be readily transferred from one to another as required, and for this and many other purposes an efficient ambulance service is essential. Each county will have its own general hospital or hospitals in the county town and other large centres. The hospitals will be staffed by specialists who will also see cases in the health centres. The hospitals will receive patients sent to them direct by the home doctors of the county who will be encouraged to keep in touch with their patients while in hospital, and, in addition, cases transferred from the smaller hospitals of the county. The needs of medical education will probably be best met by attaching medical schools to the county hospital in university and certain other towns. Most of the patients in these hospitals will be drawn from the county in which the hospital is situated and the cost of their treatment will be met by the county. But, in addition, it will be possible to transfer to these hospitals cases of special difficulty or interest from any part of the country. The cost of treatment of such patients could be paid for by the county from which they come. In addition to these county and university hospitals, there will be smaller hospitals especially for accidents, and for chronic or less serious cases, dotted about the county. In charge of each of these hospitals will be a capable resident medical officer. Where members of the home service are living sufficiently near, they will be encouraged to continue the treatment of their patients after their admission to these hospitals. In addition, specialists attached to the county or university hospitals will be called upon to see patients in consultations in the wards of these hospitals, either when they attend at the adjacent health centre or when specially sent for. The close association between these local hospitals and the county hospital will make easy the transfer of case to the latter when required.

There will also be required one or more large hospitals for infectious disease in each county. It is a great mistake to provide one of these hospitals in every urban districts, as treatment is better carried out by doctors with special experience. The centralisation of hospital treatment both for infectious and general diseases which has been recommended will undoubtedly result in some hardship to the friends of

patients who had been removed to hospitals far from their homes. The resulting advantages from increased facilities for treatment will, however, more than compensate for this. The sanatoria for tuberculosis, both pulmonary and surgical, will also be administered by the committee.

(D) *Child Life*.—If the best results are to be obtained nationally there must be continuous medical supervision for each citizen from conception to the grave, and a careful and continuous record kept of all events of importance medically. Every health centre will have its child-welfare department under the charge of a doctor, especially skilled in the recognition of the earliest symptoms of disease in infancy and childhood. Every mother will be encouraged to bring her children to this clinic at frequent intervals, whether apparently healthy or not. Where a defect is detected, it will be either dealt with in the clinic, referred to the home doctor, or sent on to a specialist as is best for the child, and in any case the home doctor will be communicated with. A dental inspection will be carried out at the same time and treatment when needed.

The health education of the public should begin in the schools and simple instruction in the laws of healthy living will be given during the whole of the school life of every child by properly qualified teachers under the supervision of the school doctor. The school medical service will be attached to the health department and not to the educational. New schools will be of the open-air type and it will be the business of the school doctor to keep a watchful eye not only upon the school buildings but also upon everything that takes place within the school. Every child will be carefully examined medically and dentally not less than once every second year, and the examinations will be carried out in the health centres, usually by the same specialist that is in charge of the child welfare centre, and defects discovered will be dealt with similarly.

(E) *Mental Disease*.—It is important that insanity should no longer be regarded as a condition for which nothing can be done to relieve or cure. Seeing that some physical affection frequently accompanies and is the apparent cause of mental disease, words for the treatment of early cases are best provided in large general hospitals, and specialists in every branch of medicine should attend regularly at mental hospitals to see cases referred to them. Lower grade mental defectives

are best dealt with in colonies where they can be taught and practice occupations suitable to their mental powers.

In conclusion, it may be useful to refer to briefly those health services which come under more than one sub-committee as described in the above scheme.

Maternity.—Some reduction of maternal mortality is to be expected as a result of an improved standard of life and better housing conditions. Of equal importance are careful and repeated pre-natal examinations by doctors with special experience. By this means at least half the conditions which are the cause of maternal mortality can be recognised and dealt with. An attempt should be made to persuade every mother to have her baby in a maternity hospital. Experience shows that these hospitals are most successful when they contain not more than 100 beds and have ample isolation accommodation. A capable medical officer must be available in the hospitals at all times, both day and night. An ambulance service should bring the patient to hospital and carry everything necessary in case of a precipitate delivery. For those apparently normal pregnant women who insist on having their babies at home, the services of midwife will be provided, and she will send for an obstetrician when required.

Pathology.—It is important that pathology should not be divorced from clinical medicine. Pathologists, physicians and surgeons must work together in close association. Pathological laboratories will, therefore, be required in all health centres and hospitals, and, in addition, in most counties a special laboratory will be needed for the production of antitoxins, sera, etc. The detailed organisation of the required laboratory services is best left to a representative committee of the pathologists of the county. Every laboratory will be staffed by at least one technician and one medically qualified pathologist who may be part-time, *i.e.*, undertake duty at more than one laboratory. The laboratories will be grouped in areas and a larger "group" laboratory will supply media, stains, etc., to its satellites and carry out special and difficult investigations. Most of the research work will be done in these "group" laboratories.

Research.—Money wisely spent on research is money well spent, but this alone will not provide the genius capable of original research.

evidences of various medical associations and organisations in Britain, where the voluntary system of medical service has been working for a very long time. We do so, as this report is very interesting and particularly instructive to the Government and public of Madras at the present moment and in drawing their attention to it we request them to give it a careful perusal and study.

For now-a-days so much condemnation is heard of the paid system of medical service and its substitution partly or wholly by a voluntary system. This is voiced by non-paid medical men so eloquently and at all possible moments that, we are afraid, even responsible authorities have begun to doubt the necessity of paid medical service and Government maintained Hospitals. In these days of revolutionary ideas, whispers are heard even from responsible lips, we regret to learn, that maintenance of Hospitals and paid medical service is not part of the State's duties. One whisper suggested the transfer of Government hospitals to the missionary authorities, probably ignorant of the fact that the missionary hospital system is a complete-paid system of perhaps a different type.

The substitution of the present partly-paid system by voluntary system, we are afraid, may not be conducive to the best interests of the public. This Mania of voluntary system perhaps had its origin from an incomplete understanding of the British voluntary system. But may we point out that even in Britain it has been evident during the recent years that both the public and the medical men have begun to realise the inevitable defects of their voluntary system and have expressed their views in Journals and on platforms and are demanding the substitution of voluntary system by the paid one. Even as it is Britain has an extensive partly-paid medical service in the panel

system. What they are contemplating now is the development of a complete-paid system.

Why then, may we ask, that we in Madras are anxious to reverse the wheel of progress in medical service by the substitution of partly-paid system with a voluntary one which Britain have tried so long and found wanting? Defects there may be in our present partly-paid system but they are better remedied, to the better interest of the suffering public by conversion to a complete-paid system when the paid-servant of the State attends to the needs of the suffering public as his duty for which remuneration from the patient is debarred.

We trust the Government and the public will study the question carefully in all the different aspects before any drastic changes are proposed. The report of the committee published elsewhere, we are confident, will repay amply a careful perusal and thoughtful digestion.

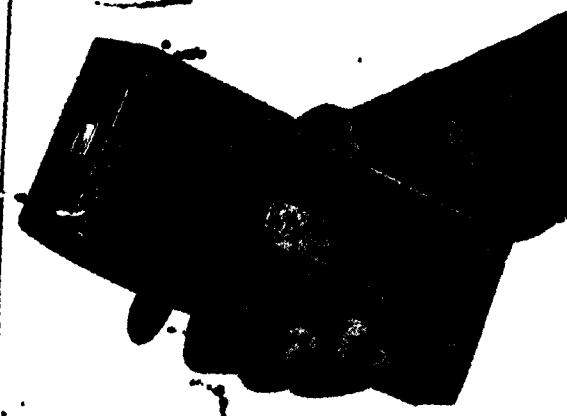
Association Notes.

A clinical meeting of the Association was held on Saturday the 25th February 1933 in the Gifford School, Government Hospital for Women and Children.

A clinical meeting of the Association was held on 28th March 1933 in the General Hospital when there was a clinical demonstration of surgical cases.

The staff of both the hospitals were kind enough to entertain the members at Tea.

The Executive Committee met twice on 28th April and 14th June and drafted a memorandum to the Surgeon-General with the Government of Madras regarding the revised scales of pay as notified in G. O. No. 311 Public (Services), dated 13th April 1933.



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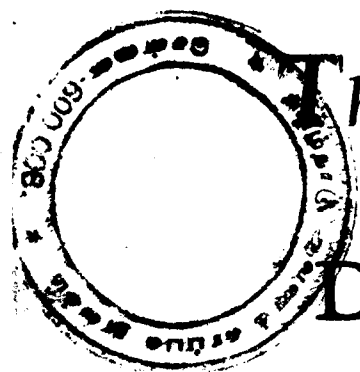
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