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SELECTIONS.

STOVAIN ANÆSTHESIA

BY

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SPINAL injection as a means of inducing anæsthesia has never become a very popular method with the profession. There are several reasons for this—the trouble of giving the injection and the time it takes, the strain of operating on a conscious patient, the occasional faintness of the patient, and, to a certain extent, the variability of the effect of the drug. These all act as deterrents, and although a great many surgeons use the method occasionally, comparatively few make a regular practice of it.

I apologise for this paper on a subject about which so much has been written already, because I really have nothing original to say, but I hope to be able to show that in a great many cases the advantages of stovain more than compensate for the disadvantages, the chief of which I have mentioned above. I do not propose to discuss spinal anæsthesia in a general way, but simply to give an account of my own experience, and this is limited to something over five hundred cases. I have only used stovain, and only the heavy variety of that. I believe some of the other drugs are safer, but none give such a perfect muscular paralysis, and as most of my cases have been abdominals, this is a very important point. I have always used stovain and glucose, because I think that the level to which the anæsthesia extends can be better regulated with this preparation. All my injections

have been given in the lumbar region, and I have no experience at all of those higher injections for operations on the arms and neck.

The strongest recommendation for stovain is that it is the most perfect method of blocking the afferent nerves, and protecting the patient from shock—in other words, of obtaining anoci-association. Unfortunately, just after its injection the drug itself causes a considerable fall in blood-pressure. This is not usually alarming, and soon passes off; but I shall discuss this feature later.

Operations, therefore, which are associated with much shock can be more successfully performed under spinal anæsthesia than with any other anæsthetic. As tending to bear out this statement, I might mention that I have done ten disarticulations at the hip after an intra-theal injection, and all these cases except one got over the operation. This patient was in a railway smash, and was brought in in such a mangled condition and so collapsed that under ordinary circumstances he would have been left to die, but I tried to save him by removing the mangled limb in the hope that there would be less shock after the clean division of the nerves. He died about eight hours later. The other amputations were mostly done for septic gunshot wounds, and as prolonged attempts had been made to save the limbs the patients were invariably in a very low condition, but they all recovered from the operation.

Another group of cases which bears out my contention that the patient is protected to a large extent from shock, is a collection of cases of Wertheim's operation for cancer of the cervix. I have performed this operation on twelve consecutive cases without a death. Many of these cases were suffering from very extensive disease, and with the exception of one or two, in which complete eradication of the disease seemed quite hopeless, the iliac glands were removed as well as the primary growth.

The death-rate in this operation is high, even in the hands of the most experienced surgeons. My own death-rate before I began using a spinal anæsthetic was two out of seven cases. I might also say that in one of those twelve cases mentioned above in addition to removing the uterus, parametrial tissue, and upper part of the vagina, I removed the whole rectum from the pelvic

colon downwards, an operation which would have been quite impossible for me without the help of a spinal anæsthetic.

I think I have said enough to demonstrate the advantages of stovain in operations associated with much shock.

Cases with much abdominal distention *e.g.*, intestinal obstruction—form a group where it has a very great advantage in another way. Every surgeon has experienced the great difficulty of closing the abdomen when the bowel is distended with gas. Indeed, this part of the operation often takes up much more time than the actual relief of the obstruction. With a good stovain anæsthesia there is none of this trouble. The abdominal muscles are so completely paralysed that the edges of the abdominal wound can easily be brought together. The earlier part of the operation is much facilitated also, because one can quickly take out the whole, or greater part, of the intestine, so as to get one's bearings, and have no anxiety about getting it easily returned. There is also this advantage that there is not the same tendency to paralysis of the involuntary muscle of the intestine—in fact, during the operation, and while the bowel was being handled, I have often seen powerful contractions of the intestine going on.

But while in operations accompanied by much shock, and in operations for the relief of intestinal obstruction, stovain is the anæsthetic *par excellence*, it may be used with advantage in almost any operation on the abdomen or lower limbs. I have personally performed most abdominal operations under it. I will speak now of some of the disadvantages, and while doing so mention some of the contra-indications.

I have referred to the trouble of giving the injection. This does not really amount to much. If the skin of the back, at the site of the puncture, is anæsthetised by making a small wheal with novocain, the patient has little pain from the puncture, and the operator has seldom much difficulty in getting into the spinal canal. I find that I can usually anæsthetise the patient in about the same time as it takes to put him under chloroform. As to the strain of operating on a conscious patient, I find it much less than with an inhalation anæsthesia where the administrator is not a skilled anæsthetist. I may say, however, that one must have the proper mental atmosphere in the theatre. I have noticed that

when operating where the staff was unaccustomed to spinal anæsthetics, I did not have such good results, because the nurses were anxious, and in spite of the fact they tried to disguise the fact, the anxiety was invariably communicated to the patient. However, after a few cases had been done and the nurses saw that the patient was not suffering, they ceased to worry, and the patient also became calm. Everything should be done as quietly as possible, and even if one may be extremely anxious, it is necessary to talk in a casual and matter-of-fact way to the patient. Of course, by giving a dose of morphia and hyoscine, or omnopon and hyoscine, one can have the patient sleeping during the whole operation; but I am inclined to believe that after this injection patients are more likely to suffer from chest complications. I might say, in passing, that I am very doubtful if stovain has any advantage over chloroform in cases with bronchitis or other pulmonary lesion. I think a post-operative lung condition is as common after stovain as after a general anæsthetic.

To my mind, the greatest objection to stovain is the initial fall of blood-pressure, which is produced by the drug itself. Just at the beginning of the operation the pulse often becomes soft, the face pale, and there may be sickness and vomiting. With a moderately healthy patient there is seldom reason for anxiety; the apparent collapse may be easily counteracted by an injection of pituitary extract, or by dropping a little ether on a mask and holding it over the patient's face. But in the old and feeble, in people with serious renal disease, and those who are suffering from recent loss of blood or anæmia, the condition of the patient may become quite alarming. Even while one realises this, it may often be worth while in those very weak patients to take the extra immediate risk for the eminently better result that one will obtain afterwards if the patient has been protected from afferent impulses during the operation.

Two cases I have had recently illustrate this point. In one of the cases I only gave the anæsthetic for Mr. Kay to operate; in the other case I gave the anæsthetic and operated myself. The first patient was a very feeble old man, with bronchitis and a weak heart, who was suffering from retention from an enlarged prostate. It was considered that the patient had little chance of

recovery if a general anæsthetic was used, and so an injection of stovain was given. Soon after the injection the patient became unconscious, and the breathing became Cheyne-Stokes in character. As the operation could not possibly make the patient any worse, Mr. Kay decided to remove the prostate, and by the end of the operation the patient had recovered consciousness, and he afterwards made an uninterrupted recovery. The other patient was a man of about 50 years of age who had been under treatment for anæmia for some time. He developed acute intestinal obstruction, and I saw him when he had been ill for thirty-six hours. He was a very stout man; the abdomen was much distended, the pulse weak, and the lips almost white. Although I realised I was taking a risk, I decided to give him stovain, as I did not think he could possibly recover under a general anæsthetic. After his injection he became unconscious like the previous case, and his pulse became imperceptible. As all afferent impulses were cut off and the operation could not affect him in any way, a little ether was given him on a mask and laparotomy performed. I found an inoperable growth at the hepatic flexure, but was able to relieve the obstruction by short circuiting. The patient made a good recovery.

Headache is sometimes complained of during the first few days after the operation, but this is unusual. I have noticed that it always occurred among several patients at the same time. Presumably, the anæsthetic came from a particular batch of stovain-ampules, and I should think that the symptom was due to some impurity in the drug.

The duration of the anæsthesia is variable, and the higher up the site of the operation the shorter time it lasts. One can seldom count on much above half an hour in the upper abdomen, but in one case it lasted nearly an hour, and I was able to excise a third of the stomach under it. In the lower abdomen an hour is about the usual time, but if the operation is not over in this time, the stovain anæsthesia can be supplemented by a general anæsthetic. In almost all the Wertheim operations I have mentioned this was necessary, for the operation usually lasted about an hour and a half, but the part of the operation which would cause most shock was always done before the general anæsthetic was necessary.

and mouth disease; though a safe method of producing active immunity without at the same time producing virus would be a useful adjunct to the policy now in force, and such a method would be of especial value if it became necessary to resort to isolation of affected animals instead of slaughter.—*Journal of the Royal Institute.*



SURGICAL ASEPSIS IN OPHTHALMIC OPERATIONS.

Recent observations throughout a number of American ophthalmic surgical centres bring strongly to mind the fact that the eye surgeon is by no means in the same class as the general surgeon, as regards certain points of technic and especially asepsis, and this applies not only to the average man, but to the leading operators as well. Little can be said but of praise as to their surgical diagnostic ability and their manual dexterity; but when it comes to the finer points of actual asepsis our surgical confreres, especially those who do abdominal operations, laugh at us.

God has indeed been good to the oculist—even in the old days of the frock coat donned in the morning, worn to the consulting room, in the street and crowded clinics and never even taken off for the washing of hands in the operating room. The ectodermic tissues of the eye, as has the lining of the nose, constantly exposed to atmospheric micro-organisms have acquired a certain immunity. But let the globe once be opened the mesoderm is a fertile pabulum for disease germs. True it is that our hands and fingers do not come in direct contact with the tissues; and, if our instruments be sterile, nature forefends what few germs enter the bulb and it is not necessary for absolutely complete "surgical lingerie." Few of us care to diminish our *tactus eruditus* by the use of rubber gloves, as does Barraquer; and few of us go to the opposite extreme and rub the lids, or even press on the cornea, with the bare finger, as does Henry Smith.

What we particularly wish to call to the attention of ophthalmic operators, is the possibility of the present rate of intraocular infections after opening the globe, being diminished by the use of the head covering and the mouth mask, neither of which was much

in evidence in the Eastern eye clinics and hospitals recently visited. Is not our hair always full of dust—of scales which carry infections, as well as innocuous germs; and which fall off in a shower when we stoop over, and certainly get into the eye of the patient in the customary posture in the operating room? Do we not also note the aura of steam extending a couple of feet from our mouths and nostrils, on a freezing day? Because we cannot see this in ordinary temperature, that is no reason for forgetting its existence.

Expired breath contains many droplets of water mixed with mucus and micro-organisms. Then, too, every time we open our mouths to talk, actual drop of spit may be expelled with some force, for several feet, and saliva is certainly not clean. I know several world-famous operators with whom it is no pleasure to talk face to face, for they always unknowingly actually spit in the visage of the vis à vis. Especially in lecturing over a subject in the operating room, it is necessary to have a face mask and cap in addition to the usual operating gown and general care, for observers, assistants and principal operator. Thus we may not only lessen our infections, but our incomplete efforts at asepsis will cease to be a joke to the general surgeon. H. V. W. in the *American Journal of Ophthalmology.*



A PLEA FOR PRE-SURGICAL DIAGNOSTIC ACCURACY

BY

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A plea for an ideal state preconceives a criticism of the conditions that prompt it, and likewise, axiomatically speaking, the recognition of the need for a plea, involves also the recognition of the need for a criticism. To be over-sanguine, and consciously content with our work at any time, is indicative of mediocrity or retrogression, and in the realm of medicine and surgery it is particularly a pathognomonic sign of approaching decadence, if not an actual loss of vital interest in the whole of the altruistic, scientific progression of the profession.

It can be safely conceded that self-satisfaction is a prevalent disease, protracted in form, yielding sluggishly to inspirational stimuli. It can be classified as a type of psychological sleeping sickness, sporadic in all professions, and endemic among medical men. This, as a broad criticism, covers a great multitude of our remedial sins, both of commission and of omission, and is, after all the basic fault that runs trickling under the structure of our scientific edifice, threatening to bring it down about our ears with rude awakening.

Ignorance is forgiveable, the weakness of false pride is not. To make a "snap" diagnosis is not necessarily a crime, but to arrogantly persist in maintaining an erroneous opinion in the face of over-whelming logic and an abundance of scientific proof to the contrary, often proves a grave, irrevocable sin,—grave, in both senses. I recall the case of a general practitioner of the old school of many years of so called experience in a small town in eastern Pennsylvania. I happened to be visiting the place, and while there, one of its leading citizens was taken suddenly ill with severe abdominal pain, vomiting and diarrhoea. The leading physician referred to diagnosed acute indigestion and treated him with high rectal enemas and a restricted liquid diet. His drug therapy consisted of fractional doses of calomel and chalk. For about ten days the patient persistently refused to die in spite of the doctor's zeal. This case was quite easily diagnosed as cholelithiasis with acute cholecystitis. The diagnosis was accurately established and logically proven, but our "snap-diagnostician" was as stubborn as Nero, and arrogantly played on the harp of his false opinions, even while his patient was being relieved of his calculi by appropriate surgery. Submission to reason is one of the highest evidences of a trained and honest mind. In this instance, both training and honesty were woefully lacking, and these examples can be multiplied unfortunately, ad infinitum. Just one more illustration to illuminate the point in question. A married woman, 23 years of age, was submitted to double salpingectomy and appendicectomy, by one of the numerous haphazard surgeons of this city. Forgive the unfortunate appellation, which, however, will bear the scrutiny of truth. About four or five days after the operation, complete

1922.]

paralysis of the bowels ensued with irrepressible vomiting. The surgeon in charge persisted in a diagnosis of newly formed intestinal adhesions and advised re-operation. Consultants logically pointed out a simple post-operative ileus, and advised against operation in the face of the patient's lowered resistance, shock, etc. Result: another Nero, another Rome, and a lamenting husband and child.

The doctor who practises his profession pseudo-scientifically is infinitely worse than the openly avowed "disciple of Mammon" quack or charlatan. The one is insidious, perpetrating his nefarious work under cover of darkest night, the other invites combat openly in broad daylight. Of the two evils, the latter is obviously the least. The honest practitioner need not be a walking encyclopedia of medical knowledge, nor an Osler in experience; his honesty is his patient's greatest source of confidence and safety. Greene put the matter very aptly when he said that "self-deception, a narrowed mental vision which disregards new facts of later development in the individual case and resists blindly the introduction of new methods in practice, no less than cowardly adherence to an erroneous preconception, are deplorable".

What applies to correct diagnosis in surgery, is even more specifically applicable in medicine. The end-results of error, however, are far more visibly evident in surgery than in medicine, although the inter-relationship of the two is so close that any sharp distinctiveness in their relative values cannot be made out. We have seen relatively uniform therapy or none, do far more than one zymotic disease long after the patient's recovery or otherwise; when the error or correctness of the diagnosis was subsequently cleared up. Whereas, one could open up a large pathological museum the size of our city hall with the normal appendices removed for "acute catarrhal appendicitis", or even for such a delightfully rare diagnosis as a Meckel's diverticulum. The long suffering appendix has on innumerable occasions borne the burden of a simple enteritis or mucous colitis. Gall-stones, gastric, pyloric or duodenal ulcer, and the popular "indigestion" have long been mortal enemies in competing with each other for the first place in the diagnosis of epigastric pains, to the discom-

figure of the honest practitioner, and the gloating glee of the avaricious know-it-all.

The diagnosis of pregnancy is ordinarily easy, but the greatest caution and inflexible honesty of investigation should be exercised, when a case, somewhat off the beaten path in character present itself, as for example, under the following circumstances. The girl was 14 years of age, attending high school. She had menstruated twice, and noticed about four months before examination, that her abdomen was slightly enlarged. There was a mass in the median line directly associated with the uterus. The diagnosis of fibroid or fibromyoma was made and the patient immediately operated upon. A five months' pregnant uterus was found, and a history of contact was later secured. But the spot-light glare rested horribly on the practitioner whose case the little girl was. A painstaking investigation, a mind honestly and scientifically bent, would have avoided shoals of misery. And what is more regrettable is that these experiences when viewed with a biased and smugly satisfied mind, are repeated over and over again. No mental development or knowledge is derived from them, and the same dire misfortunes recur with alarming regularity.

To be critical of ourselves, is to be optimistic; to be optimistic means that we are always ready to learn—to reconstruct ourselves and our methods, so that the greatest good can come from efforts truthfully and intelligently directed, and that above all, dishonesty and stubbornness may find no place in our work.—*American Journal of Surgery.*



SYPHILIS AND ITS MODERN MANAGEMENT

BY

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Dr. Thom, after a large experience, outlines here how to give the intensive treatment of syphilis with every possible margin of safety, how to handle the so-

called asymptomatic cases, neuro-syphilis and neglected cases. Treatment by mouth is wholly condemned. This notable paper should be widely read:—

EDITORS.

A disease that has existed as long as syphilis has must necessarily undergo various phases of evolution in so far as our knowledge of its pathology and treatment is concerned. Yet, until the advent of organic arsenic a little more than ten years ago, the therapeutic technique that was universally used to attack the disease had hardly undergone any modification since mercury was first employed by the Chinese and Hindus more than a thousand years before the Christian era.

The discovery of the therapeutic value of iodid of potassium by German physicians a hundred years ago and its later application to the treatment of the disease first by Wallace, of Dublin, and later by the great Ricord, marked the greatest advance in the treatment of syphilis in the nineteenth century. The demonstration of the fact that mercury could be introduced into the body by intramuscular injection, as was done by Scanzoni, of Pavia, in 1860, and its subsequent revival some twenty-five years later by Balzer, of Paris, when asepsis prevented the hitherto inevitable abscess formation, which had militated against its use before, was also an advance in the treatment of the disease which we must not overlook. The discovery of the cause of the disease, which had eluded all former investigators, by Schaudinn and Hoffmann in 1905 and two years later Wassermann's utilization for diagnosis of the phenomenon of complement fixation discovered a few years before by the French workers, Bordet and Gengou, gave added impetus to the study of this, the most protean and elusive of all diseases, which culminated in 1911 when Ehrlich gave salvarsan to the world. We now know syphilis better than ever before and we can treat it better than ever before. If the average physician does not know this it is not because of the means at his command.

INADEQUATE TREATMENT

I shall not discuss any phase of syphilis except its treatment, but before I do so I desire to go on record, although it may not be pleasant reading, that the reason tertiary syphilis and all that

reason there are certain precautions which should invariably be taken before administering the drug. I shall briefly enumerate them.

CONTRAINDICATIONS

All patients who are to be injected with salvarsan should undergo a thorough physical examination. The heart should be examined, especially for evidences of myocardial degeneration. While I do not consider it to be an absolute contraindication, yet if the degeneration is advanced, with signs of dilatation, organic arsenic should not be given to such patients even in a low dilution. Old salvarsan in three hundred c.c. of solution is absolutely contraindicated. The same holds also with aneurysm. In low dilution neosalvarsan may be given, but in high dilution—ninety c.c., or old salvarsan in the ordinary dilution—the procedure is fraught with danger. In so far as nephritis is concerned, it is to be understood that in the acute parenchymatous form due to some infection other than syphilis, salvarsan is to be withheld. If the nephritis is syphilitic and sometimes, although rarely, it is, it should be given; in fact, in such cases it is to be preferred to mercury. In chronic nephritis, unless the number of casts exceed ten to the field, the drug may be given. In the presence of jaundice, whether due to syphilis or to some other cause, salvarsan is not to be given. If upon palpation the liver is found to be enlarged and tender, salvarsan is to be withheld until the enlargement and tenderness pass away.

It has been stated that salvarsan should not be given in acute iritis. I disagree with those who teach this. I have many times given the drug for this condition without observing any untoward results. By some, salvarsan is withheld in acute cerebral lesions, but with this I am not in accord. I do not think it wise, however, to administer salvarsan in advanced tabes when the patient is in an extremely weakened and debilitated state. Should a reaction occur, it may possibly terminate fatally and, besides, no useful purpose is served, as these patients do not respond to treatment.

LIMITATIONS.

It is also well to remember in the treatment and prognosis of syphilitic processes that while salvarsan will remove, and in not a

few instances cure, the syphilitic process *per se*, it cannot restore function that has been destroyed—it cannot cure sequelæ.

As soon as the chancre has been recognized—either clinically or by the demonstration of the *Treponema pallida* in a drop of serum expressed therefrom—treatment should commence. Do not wait in these early cases for the appearance of a positive Wassermann reaction. By so doing, much valuable time is lost—time that is vital for the absolute cure of the disease. It is while Wassermann is still negative, that is, before antibodies in sufficient amount have been generated by the presence in the tissues of the infecting organism, that the best chance for sterilizing the body is afforded.

THE CHANCER.

If possible, excise the chancre. If this is not possible, keep the sore constantly covered with a plaster made by spreading mercurial ointment on a piece of gauze. Clear the bowel with a saline the night before and allow no food to be taken for five hours before the salvarsan is to be given and for five hours thereafter. Give the drug on three successive days. For an adult, either male or female, weighing between one hundred and twenty-five pounds and one hundred and seventy-five pounds, give 0.9 gm. of neosalvarsan in thirty c. c. of doubly distilled water, which should be *fresh*. The same is given on the following day and the day following. The patient then rests for a week. Then give mercury, either by inunction or intravenously. The intravenous route for the administration of this drug is, in my opinion, the most potent method where by it can be given. It is not always possible, however, to follow this procedure if the superficial veins are not sufficiently prominent.

MERCURY INTRAVENOUSLY.

Mercury is given intravenously in the same manner as salvarsan, except that the fluid vehicle—normal salt solution—need not exceed six to eight c. c. The salts used are the bichlorid, the benzoate and the cyanide. Of these, a stock solution is prepared in which the mercurial strength is 1 per cent.; that is, ten minims contain one-tenth of a grain of the mercurial salt. It is added to the salt solution and injected into the vein mixed with

the blood, which flows from the vein through the needle into the charged barrel of the syringe. By allowing the blood from the vein to mix with the solution, an albuminate of mercury is formed that is non-irritating to the endothelial lining of the veins, although sooner or later the lumen of the vein is temporarily obliterated, and, after a few injections into the same vein, another must be used.

The number of intravenous injections of mercury that can be given varies from fifteen to thirty and the dose ranges from the initial tenth of a grain to a third or even more of a grain. Personally I never exceed a third of a grain (0.02 gm.), but I have known it to be done and with no ill effects. The injections can be given every day or every other day. The results achieved by the intravenous injections of mercurial salts are almost equal to those of salvarsan, and from an extensive experience I can say that they are not attended with the slightest danger, except an occasional infiltration which soon passes off when hot fomentations are applied.

INUNCTIONS.

If it is not possible to give the mercury intravenously the second choice is by inunction. This is not altogether a pleasant method of introducing the drug into the body, but next to the intravenous method it is, in my opinion, the most potent therapeutically. Thirty inunctions, either with blue ointment or a 50 per cent. calomel ointment, constitute a course. It is usual to give six inunctions on various parts of the body—avoiding parts that are covered with hair—and then after anointing the parts that have been rubbed with oil, the skin is scrubbed with soap and water, after which the patient takes a hot bath.

SALIVATION.

Salivation occurs more frequently with inunctions than with intravenous injections. Should the gums become tender, the inunctions must be stopped at once and elimination of the mercury hastened by a saline purge and by giving moderate doses of potassium iodid—ten or fifteen minims of 100 per cent. solution *t.i.d.* in carbonated water after meals. Small doses of atropin may also be given and a potassium chlorate mouth wash used. In fact,

it is well, whenever mercury is being exhibited, to have the patient use a potassium chlorate mouth wash, as its use undoubtedly tends to prevent the drug affecting the teeth. If the teeth are in poor condition, they should be attended to before commencing to give the drug, no matter what mode of administration is used.

LUMBAR PUNCTURE.

If treatment is begun before the Wassermann becomes positive a course of salvarsan, as described, and a course of mercury following, is usually sufficient to effect a cure—serologically, which is the most important, but clinically as well. However, before dismissing the patient, a lumbar puncture should be made and the cerebrospinal fluid examined. I cannot insist too strongly upon this, as at least 25 per cent. of all syphilitics will show involvement of the central nervous system, *even in the primary stage of the disease*. If therefore, upon examination the cerebrospinal fluid shows any deviation from the normal, the course of treatment as here outlined should be repeated and the fluid examined again. Should it still show pathologic changes, intraspinal therapy, after the manner of Swift-Ellis or Ogilvie, should be given. In early nerve involvement, such treatment will in nearly every instance cause a disappearance of the cytobiologic abnormalities, as evidenced in the various reactions of the cerebro spinal fluid.

SECONDARY STAGE.

The treatment of secondary syphilis does not differ from the above except that to effect a serologic cure—which should be the only criterion of cure—requires a longer time; that is, the courses as described of salvarsan and mercury may have to be repeated many times.

TERTIARY STAGE.

My method of treating the tertiary form of the disease differs in mode, rather than in kind, from the foregoing. In tertiary syphilis we have to deal with a long-established diathesis which has almost invariably—although not always known to the patient or to the physician—given rise to many dyscrasias, some of which may have profoundly altered the bodily functions in a way that does not permit of their being ever restored to normal. This is especially true of the cardiovascular system and of the central

nervous system. It is also true of the other viscera, notably the liver. As I have already stated and for emphasis repeat, no drug can restore tissue elements that have been destroyed, and if these tissue elements are necessary to certain functions, these functions must necessarily be interfered with if their activating mechanism is injured.

SO-CALLED ASYMPTOMATIC SYPHILIS.

As Kolmer, Broadwell and Matsunami have shown, the antibodies generated by the disease are strongest in the latent tertiary stage, that is, the stage when the only evidence of syphilis is a positive Wassermann reaction. As stated by Eberson, "A state of latency would imply a balance that has been struck between the antibodies in an infected person and the invading spirochetes." I am in accord with him that during that stage the *Treponema pallida* are innocuous to the host. However, it is my belief that this innocuousness is more apparent than real, and if these patients were carefully examined, and by that I mean not only a careful search for somatic signs of the various biochemical tests now at our disposal, comparatively few of these so-called asymptomatic syphilitics would be found to be free from symptoms after all. Since we also know that treatment by no means interfered with the development of this immunity balance, as it were, I believe that every syphilitic, even in the absence of symptoms except the great—the cardinal one of a four plus Wassermann reaction—should receive treatment to change, if possible Wassermann reaction to negative; for I believe with Neisser that whoever has a positive Wassermann reaction—after ruling out leprosy and in some instances malaria—has syphilis; and whoever has syphilis, even a symptomatic syphilis, lives in danger. Therefore, although there are those who disagree with me, the presence of a positive Wassermann reaction is always an indication for treatment, and treatment until that positive Wassermann is changed to a negative, if that be possible—which I might add is not always so.

IODIDES.

As Brown and Pearce, Warthin, Engman and others have conclusively shown, the positive Wassermann reaction in the serum of asymptomatic syphilitics is due to the presence of

foci of *Treponema pallida* scattered throughout the body—the residue, as it were, of the original dissemination of the organisms. These obscure strongholds of the disease must be broken into and their ubiquitous inhabitants destroyed. For that reason, I believe that in tertiary syphilis, organic arsenic should be invariably preceded by potassium iodid. In giving iodid, however, the dosage must be sufficiently large to have an effect. The dosage that is usually given is entirely inadequate. Begin with twenty minims of 100 per cent. solution t.i.d. after meals in water or milk, preferably carbonated water. This dose should be rapidly increased to at least forty drops t.i.d. and continued for two or three weeks. When the iodid is stopped rest the patient for several days or a week and then give an intensive course of neosalvarsan. Rest the patient again for a week and give a course of mercurials, or else give neosalvarsan once a week or once in ten days for four to six doses. At the end of this course, if mercury has not been given, mercury should be given after an interval of a month; and with the mercury, especially if inunctions are used, a parallel course of iodid.

INTENSIVE TREATMENT.

The treatment, as outlined here, for tertiary syphilis may seem at first glance to be somewhat strenuous. I do not consider it so, however, and if there is no untoward response of the liver or kidneys—which there rarely is—the patient will feel in a far better physical condition than he has for many years, because for the first time since he contracted the disease, perhaps, he is entirely free from its poison.

This method applies to all forms of syphilitic syndromes, cutaneous, visceral and neural. While undoubtedly some forms of syphilis of the nervous system resist it, yet it should be tried before resorting to intraspinal therapy or the carotid medication of Knauer.

DIET.

As Emerson said, "Perfection is made up of trifles, but perfection is no trifle." The question of diet is rarely mentioned in the treatment of syphilis, except in a most perfunctory way that it should be nourishing and easily digestible. Carefully conducted

ABDOMINAL OR PERITONITIC HICCOUGH.

Those suffering with hiccough may be placed in two classes, those who are not seemingly ill, and those in whom there is already severe illness. Of the latter class, there are two main types, the peritonitic and the alcoholic. There should be little difficulty in deciding between these two, for the alcoholic sufferer has a hiccough of his own, and the alcoholic condition generally carries its tell-tale marks. The other class, the abdominal or peritonitic, will have presented grave symptoms long before the hiccough sets in, perhaps the diagnosis already having been confirmed by a laparotomy. Unfortunately, in these serious abdominal cases, hiccough does not help to distinguish between peritonitis due to acute pancreatitis, acute abdominal obstruction, or acute post-operative dilatation of the stomach, its occurrence and persistence being simply an omen of grave import.

THREE TYPES OF PERSISTENT HICCOUGH.

When hiccough is quite persistent in a patient who is not obviously ill, so troublesome that more than a simple hiccough must be thought of, three main types should be considered, such as,

- (1) Hysteria or some neurosis or psychosis.
- (2) Mediastinal irritation of the vagi.
- (3) Degenerative changes in the medulla oblongata.

The first type is rather common, and sometimes requires much eliminative study before the physician can feel assured of his diagnosis.

The other two are rare and their positive diagnosis during life is not at all certain, being generally a matter of opinion.

FUNCTIONAL HICCOUGH.

Functional hiccough is rather often seen by the neurologists, and is sometimes a malady most trying to the medical attendant. The patient is generally a young woman between fifteen and thirty years of age. She may hiccough persistently throughout her waking hours day after day at the rate of two or three times a minute. The hiccough stops during sleep. These cases generally sleep well. They also eat well, but the hiccoughs break into

the space of the meal in a distressing manner. The reflexes are usually exaggerated. The patient is emotional and alarmed over her condition. The family and friends, too, become upset, and, unless the physician is fairly sure of his ground, he will be placed in an unenviable position.

Fortunately such patients are quite susceptible to suggestion, and when this is skilfully applied the results are sometimes most satisfactory. The only trouble lies in the probability of some other neurosis appearing in evidence when the hiccough ceases. These are cases which try the patience of neurologists and internists, and who either eventually demand surgery or fall into the hands of quacks.

The writer has in a number of instances given anti-spasmodics and nerve sedatives to individuals, who apart from hiccough, seemed perfectly well, and whose trouble was evidently functional—in other words a plain neurosis or psychosis.

He has seen several cases of hiccough precipitated by hasty eating, where the hiccough was secondary to a mild cardiospasm. Such are generally diagnosed with ease, and as easily relieved. Many individuals who eat hastily, bolting the food like a carnivorous animal, are frequently subject to short attacks of hiccough following the meal, but these are not very annoying. Such persons have more need for words of admonition than medical treatment.

MEDIASTINAL HICCOUGH.

A rare and troublesome cause of hiccough is brought about by irritation of the vagus or phrenic nerve by tuberculous caseation of bronchial and mediastinal glands. These seldom obstruct a bronchus or in other material ways afford evidence of their presence; but they may be associated with periodic attacks of fever in a patient who looks ill and delicate, and drinks much milk. There may also be evidence of chronic enlargement of the glands elsewhere, particularly those of the neck or abdomen. In such instances of intractable hiccough, the roentgen ray may be of much aid, showing the enlarged and infiltrated mediastinal glands, as well as other dense areas of the hilum. The above

condition occurs generally in childhood, but in adults a not uncommon etiological factor may be either malignant or lymphadenomatous deposits in the mediastinum, or even fibrous mediastinitis. The former may be indicated by reason of there being symptoms of a primary growth in the œsophagus or elsewhere, or by progressive varicosity of the veins of the chest wall. In some of these sufferers there are evidences of localized bronchial obstruction. All cases of persistent hiccough in patients really ill, with or without fever, should have the benefit of a thorough X-ray examination of the chest, particular care being paid to the mediastinum. The term "mediastinitis," while in some cases not conveying very exact information, may have quite a definite bearing in severe hiccough.

The writer has in a few instances seen patients with dense mediastinal glands, who, while being examined for other complaints would state upon being questioned, that they were subject to hiccough. One said that since boyhood he had to be rather deliberate in eating, or he would have an attack lasting several hours. This is possibly a far fetched hypothesis, but it is at least worthy of thought and study.

BULBAR HICCOUGH.

Most serious of all is the hiccough due to generation of the medullary centres. In such cases there will always be associated other indications of cerebral or spinal disease. In a young adult there would be expected syphilis or, perhaps, past alcoholism, the former cause predominating. In an older individual, there would be thickened and tortuous arteries, high blood pressure, possibly albuminuria, and other features of cardio-renal pathology.

In this class of cases the hiccough is merely an added calamity, seldom being of great severity, but placing upon the weakened body just that much more of a load.

TERMINAL HICCOUGH.

Finally in many long and exhausting illnesses a hiccough comes on as one of the terminal symptoms—a part of the setting of the last act of the life drama. Whether the malady be of the digestive, respiratory or nervous system, the terminal hiccough sets in without rhyme or reason, simply serving notice that the fight for life is practically lost.

This is a subject upon which but little has been written, and the writer trusts that he has at least furnished some food for thought.—*The American Physician*.

THE CONQUEST OF TYPHOID

BY

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Enteric fever was once held to be an inseparable adjunct of civilization, and every old-time medical student received careful training in the symptomatology and clinical course of the disease. With the steady progress in sanitation and improvement in hygienic conditions, along with the introduction of anti-typhoid vaccination, the incidence of typhoid has rapidly declined. The time is not far distant when this malady will become extinct, and thus the death knell of bacillus typhosus shall be sounded.—EDITORS.

The declining incidence of typhoid fever in the large cities of the United States during the recent years may be taken as an index and measure of progress in urban sanitation. In the rural districts, however, and in small municipalities the improvement of hygienic conditions is less conspicuous; and, accordingly, in the country and in towns that have not yet introduced a sewer-system or a supply of potable water, typhoid still maintains its bad eminence as a morbid agency and cause of death.

A MEDICAL CURIOSITY OF THE FUTURE.

Enteric fever was once held to be an inseparable adjunct of civilization, and every old-time student received careful training in the symptomatology and clinical course of the disease. Differential diagnosis (based on clinical thermometry and the physical signs, such as hebetude, lenticular rose spots on the abdomen, etc.) was deemed of the utmost importance, and there were cases in plenty for the purpose of demonstration. To boil the drinking water was the sole expedient suggested as a means of prophylaxis.

Hence Brouardel incurred much ridicule when he ventured to predict that, at a period not very distant, typhoid would seldom be found in hospital wards, and that, if a case developed anywhere, physicians would come from far and near to study it as a rare disease.

At the time when this prophecy was uttered in a Paris clinic, its fulfillment appeared to be problematical and as remote as the much-heralded premillennial signs which are yet below the horizon, but which, when they appear, will be an admonition, as Holmes says, "to order your ascension robe"

ANTI-TYPHOID INOCULATION IN THE ARMY.

However, in 1911, France enacted a law authorizing and making compulsory anti-typhoid inoculation in the army. The practical wisdom of this legislation became immediately apparent at the outbreak of the war three years later, when French soldiers enjoyed a virtual immunity from this devastating scourge of the military service.

It is possible, also, quite accurately to gauge the subsidence of typhoid in our own army by contrasting conditions as they are at present with those existing during the Spanish-American War.

During the brief campaign of 1898, not less than 20,730 men were treated for typhoid in the field and base hospitals of the United States, with 1580 deaths. One fifth of the entire army personnel suffered an attack of this camp epidemic. A protective serum had not then come into use.

In 1914, with an army of 90,000 men, there were but 3 cases of typhoid among United States troops, with not a single death from the disease. Every soldier had been inoculated with prophylactic serum.

Had the same ratio of typhoid incidence obtained in 1914 as in 1898, 18,000 men would have contracted the fever—18,000 instead of 3!

Data equally as significant might be cited from British reports concerning the incidence of typhoid on the inoculated and the uninoculated, respectively, in the armies of the United Kingdom during the early months of the World War. The available statistics show that of 10,378 inoculated men only 56 had typhoid, a rate of 5.4 per 1000; while among 8396 uninoculated soldiers 272 cases occurred (30.4 per 1000, or five times as many).

It is not claimed, of course, that inoculation with anti-typhoid serum was the sole factor in the immunization of those who had received this protective treatment. There were other contributory

causes. Sterilization of the drinking water, camp sanitation and personal hygiene were important accessory and co-ordinate measures of prophylaxis. But these phases of the question, though not to be ignored, are not under consideration now.

PROPHYLACTIC IMMUNIZATION IN CIVIL LIFE.

In civil life a considerable reduction in the prevalence of typhoid has been noted. For example, in fifty-seven of the largest cities of the United States there was a remarkable subsidence of the disease in the undecennial period 1910 to 1920. In these cities the typhoid fever rate for the year 1910 was 19.6 per 100,000; in 1920 the rate had fallen to 3.5 per 100,000.

A noteworthy illustration of the immunity to typhoid infection which inoculation with the serum confers came to light during the epidemic of the fever which raged in Salem, Ohio, during October and November, 1920. In that community of 10,305 inhabitants there were 882 cases.

But it transpires that the ex-service men in the population, whose ages ranged from twenty-five to thirty-five, were rarely affected. Among the 210 men of this class living in Salem only 3 cases occurred (1 in 70).

In contrast with this relative exemption of ex-service men Salem women of the same age period and living in the same environment were much less resistant to the infection, one in eight of the total female population between twenty-five and thirty-five becoming a typhoid victim.

The only possible interpretation of this fact is that the men were immunized by the inoculation which they had undergone, while the women (the controls in the experiment) were not thus protected.

It is true (and the foregoing record takes cognizance of the fact) that inoculation alone does not secure absolute immunity from typhoid infection. But what of it? Neither is vaccination a positive safeguard against smallpox. Clinical history demonstrates that it is wholly inert in individuals of unstable mental equilibrium who refuse to be vaccinated. There is a personal idiosyncrasy in these cases! In like manner, it is probable that anti-typhoid serum

may fail to render immune those who neglect to avail themselves of its protective potency.

WIDER ADOPTION OF IMMUNIZATION URGED.

Motives of public policy, however, should lead to the adoption of preventive inoculation against typhoid as a means of health conservation in every community. Such a system of immunization has been uniformly successful within the recent past wherever it has been carried out, as in certain districts in France, Spain and Italy, and in a few localities in the United States.

Some of these tentative undertakings in the field of prophylaxis have already been cited by the writer of this note in previous publications, and there is no occasion to repeat the references here. But in this connection the hygienic enthusiasm which characterizes the North Carolina Board of Health in its propaganda for sanitation deserves special recognition and commendation.

In the *Health Bulletin*, for June, 1921, J. S. Mitchener, M. D., Chief of the Bureau of Epidemiology, gives an instructive and interesting account of what has been achieved this year through the agency of the health office, in four counties of the "Old North State."

It is an inspiration to read the recital, and one attempted to transcribe the entire record. But an extract will suffice to show its quality, as well as the self-effacing modesty and candid spirit of the authority.

"Successful campaigns have been completed in the counties, and the excellent result is due to interest and co-operation on the part of physicians, county officials, civic organizations and the public in general.

"In Pasquotank County over 4,000 were treated while two years ago the number protected was only about 1600. In Perquimans about three times as many took the treatment as did in 1919. These figures show the confidence that the people have in the treatment and prove their determination to place North Carolina at the head of the progressive work of preventing sickness and saving lives."

They have secured and popularized the application of hygienic principles. May the endemic example become a nationwide epidemic!

Nevertheless, anti-typhoid inoculation is only a provisional measure, transitional method, of prophylaxis. Some day it must be superseded by sanitation which will suppress the vile infection altogether.—*The American Physician*.

ORIGINAL ARTICLE.

ANTHELMINTIC USE OF OLEUM-EUCALYPTUS

BY

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Sub-Assistant Surgeon, U. P.

It is mostly in combination with chloroform that oil of eucalyptus has been used as an anthelmintic in ankylostomiasis. Hence it is concluded from its action that eucalyptus is probably superfluous and at least is simply an aid to chloroform while it is also observed that eucalyptus ranks very low as a vermicide but nevertheless seems to aid chloroform in its action.

Composition, Properties & Uses.—Oil of eucalyptus is distilled from fresh leaves of various species of eucalyptus, the most important of these is eucalyptus-globulous on account of its high eucalyptol content. Eucalyptol is obtained by redistilling from potassium-chloride that portion of oil which comes over between 347° and 351° (bearing very peculiar and beneficial effects on phthisis asthma and diarrhoea in doses of $\frac{1}{2}$ minim). A method of giving eucalyptus oil and castor oil is highly desirable in practice to evacuate and destroy the intestinal worms in general in the following way:—Starve the patient the day previous and give an aperient of castor oil. Then in the early morning mix thirty (30) drops of eucalyptus oil and drops of *spt.*—chloroform in twelve (12) drachms of castor oil and give in three (3) hourly portions.

As regards this anthelmintic property, nothing more is to be said than eucalyptus acts as an irritant on the parasites causing them to loosen their hold; chloroform anesthetizes them, and a vigorous purge sweeps them out while eucalyptus is probably

superfluous and at least is simply an aid to chloroform. In my mofussil practice as a parasiticide generally in all sorts of intestinal worms it forms part of routine to use eucalyptus oil with fair success among the poor in eradicating these in the following way :—

Re : Oil Eucalyptus.....mii
Spts. Chloroform..... .mv
Oil Recini.....zii
Tr: Digitalis.....mii

Mix.....an adult dose. Sig:—One dose to be taken twice a day for a week, to be followed—afterwards by a rectal injection of eucalyptus oil as well (z:i to oi) as an enema in the end once only.

I have also used eucalyptus oil, to my great surprise in several cases of Diarrhoea and Dysentery among obstinate and resisting villagers who proved very troublesome in yielding to any more rational and modern treatment and with the following resulting in a miraculous cure :—

Re: Ol eucalyptus.....mxii
Gum Arabic Powder.....grs. xii

One in a dry bottle, mix with one ounce of distilled water, shake well Sig :—zii (2 drachms) as a dose to be taken thrice a day with a sago diet until practically irritation and gripes ceased and to be followed with a usual alteration accordingly to be substituted with normal diet gradually and by slow degrees.

NOTES OF CASES.

INCISED WOUND OF THE OESOPHAGUS

BY

SAHIB SINGH MULTANI

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On the 20th June last I was called upon by a Numbardar of Ilayur, Mian Mohd. Afzal, to attend on a case of attempted murder seven miles from my dispensary at Chah Khizarwala. I went to the spot and found Zamman' son of Lalla aged 16 years, caste Baloch,

caste lying quite senseless on a charpai, where he had received these injuries by his wife named Daulat, who was married to him since one month, with a spade (kahi). I cleaned the wound antiseptically and found that the oesophagus was cut in its $\frac{3}{4}$ of its circumference and the food or milk whatsoever was given to him through mouth came out through this wound. The measurement of the wound was $2'' \times \frac{1}{2}'' \times 1\frac{1}{2}''$. I sutured the oesophagus with catgut ligatures and then sutured the wound externally with silk ligatures, but after 4 days I found that the milk or any other liquid food was again coming through this wound. I opened the silk ligature and cleaned the wound with Tr. Iodine lotion and packed it with Iodoform gauze, after 4 days the oesophagus was quite healed and no milk or any other liquid food passed through this wound. The rest of the wound healed by antiseptic dressing in 19 more days and the patient was discharged cured on 17-7-21.

VALUE OF CORRECT DIAGNOSIS

BY

MANGHAN MAL, S. H., L. C. P. S.,

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A young girl of 13 years came under my treatment for paralysis of both legs. The onset was gradual, i.e., three days before she was found completely paralysed, the weakness and a limp in the gait was observed. Going into the history of the case she was a recently married girl (marriage performed two months before the paralysis), with no signs of previous ailment, except slight rises of temperature at night for seven days, immediately after her marriage. The fever came down to normal without intake of any drugs. The family history is very sound, mother and father being of normal temperament and always healthy. Physical condition was as follows:—

The girl was of moderate size and fair constitution, with all her organs quite normal. The paralysis was more motor, than sensory. The reflexes were all normal to start with except the Babinski's which was quite marked in both toes. Examining her spine nothing could be elicited excepting slight pain, on tapping at the lower dorsal and the upper lumbar spines, which she said

was due to tapping with knuckles of fist. Great difficulty arose regarding the diagnosis as it neither seemed a case of compression paraplegia, for none of the compression symptoms were present developed, nor seemed like a flaccid paraplegia. Subsequently exaggerated kneejerks and ankle clonus with Babinskis made the case suspicious of being one of organic origin, though no organic lesion could be detected anywhere.

Taking the case to be merely functional (though no stigmata of neurosis were present) the patient was put under anti-hysterical treatment and treated by suggestion. The case made a marvellous recovery under 15 days treatment. The patient who was bed-ridden was able to go up and down the stairs by the end of the above-mentioned period. One remarkable incident observed in her was that as she progressed the deep reflexes went on increasing. Now she is able to put on her shoes without the aid of her hands (which she could not do a few days back) and is moving freely though there is a bit of weakness of the legs and feet still. A medical practitioner should always bear in mind that in a case where no cause of such disease is ascertained, the best principle is to treat it on hysterical lines, and one would get a fair response.

POINTS OF INTEREST.

1. Presence of Babinskis which is said to be negative to hysteria.
2. Absence of any neurotic stigmata in the patient.
3. No history of nervous disturbances in the parents.

PENETRATING WOUND OF ABDOMINAL WALL WITH PROTRUSION OF INTESTINES

BY

JWALA PRASAD,

S. A. S., Korihar Station Dispensary, Dt. Rai Bareilly.

Patient's name—Suraj Bux Singh	} Date of admission to hospital—14—10—21.
Age—32 years	
Caste—Hindu	
Constitution—Good.	

A penetrating wound 3" in length was inflicted at the Rt. Iliac region by the horn of a bullock on 14—10—21 at about 3 p. m.

He was seen by me the same day at about 6 p. m. The patient was lying on the ground with protruded intestines (small and large) over the abdominal wall. He was not in a state of shock at the time.

Treatment:—Wound and surrounding area being cleaned first, intestines were washed with warm saline solution (boiled) and replaced inside the abdomen. Peritoneum and divided muscles were sutured with boiled silk thread and the external wound was closed with horse hair, painted with iodine and dressed. The patient was placed in Fowler's position and was given an intravenous injection of Tr. Iodine m. XX in 2 c.c. of normal saline.

He was advised to sip hot water only.

16—10—21.—Slight discomfort over site of wound.

Dressings changed
Tr. Iodi. m. XX
intravenously.

17—10—21.—Felt desire to pass motion.

Castor oil enema
given,
Milk diet.

18—10—21.—

Tr. Iodi m. XX
intravenously.

20—10—21.—Complained of irritation in the bladder region during micturition.

Urotropine gr. X
t. d. s.
wound healed &
stitches were
removed.

21—10—21.—No irritation now

Light diet

22—10—21.—Had no abdominal discomfort and was discharged cured from hospital. He was advised of course not to subject himself to any heavy strain or exertion.

"IV. That the pyrexial phase, slight as it may be, indicates a general syphilitic sepsis, in which the cerebro-spinal system is soon involved.

"V. That early necropsies have shown that in the pyrexial phase the aorta, brain, liver, and other viscera become infected; and that the cerebrospinal system does not long escape.

"VI. That lumbar puncture should be made soon after the onset of the pyrexial phase, and the cerebrospinal fluid tested from time to time parallel with the blood testing."—*The British Medical Journal*, August 6, 1921.

Now take this in connection with the admirable paper of Dr. Thom in this issue of *The American Physician* and we have a summation of the world-wide views on syphilis entertained by the leading authorities—views that we must all entertain sooner or later, for they are being so abundantly proved out as correct in actual practice. Please note two vital points in Dr. Thom's paper first, that tissues whose physiological functions have been depreciated by syphilis cannot be restored to normal action; second, that administration of remedies by the mouth is utterly inadequate treatment, though of a certain value as a subsidiary measure.

REMEDIES BY MOUTH.

The long-time reliance on remedies by mouth has proved one point very conclusively, and that is, the value of mercury and the iodides—a value not even discounted by the brilliant work done with arsenic salts. And the fully appreciated lack of success with internal remedies given in the old way prompted the almost abandoned active treatment of the initial chancre, even to excision, a form of treatment that bids fair to come back. That mercury in actual contact with the syphilitic organism does kill it is proved; and that fact alone makes highly rational the use of the prophylactic packet of calomel ointment.

LONG CONTINUED STUDY.

Any one who has practised in the same region for over thirty years, as has the writer, has abundant opportunity to follow up cases and thus lose a great deal of his cocksureness, for he sees his failures as well as his successes. And such ones of us know very well that, despite our every effort, large numbers of our

"cured" syphilitic cases have relapsed and that neuro-syphilis is common among them. This is a fact, and we may as well face it frankly. We are definitely prepared to endorse the conclusions and the methods of Dr. Thom.

A NEW DEAL FOR THE SYPHILITIC.

Therefore let the general practitioner face the responsibility that rests upon him and prepare to treat his cases of syphilis in the modern way. If he is not prepared to that, let him be honest with himself and his patients and refuse to treat syphilis. But it is well to remember that the people are coming to a full realization of the inefficiency of the old treatment, and if the new treatment is not given by the general practitioners, they may just as well be reconciled to the fact that genito-urinary clinics will treat practically all of these cases, and the general practitioners lose out in prestige and practice.—T. S. B. in *the American Physician*.

THE USE AND ABUSE OF BROMIDES IN THE TREATMENT OF EPILEPSY.

Bromism, with its deplorable mental condition, may be as serious a condition as is epilepsy itself and is always to be avoided; it is a form of intoxication which differs widely in its manifestation. All mental cases are susceptible to bromide intoxication and especially so when mental disturbances are associated with epilepsy, and this is more marked when arterial change have occurred or when the patient has been addicted to the use of alcohol.

The epileptic with a chronic heart lesion almost always reacts unfavourably to bromides, as heart action is enfeebled by the drug. Parietic symptoms, when they occur in epilepsy, always contra-indicate the use of bromides. The irritability and mental deterioration so common in long-standing cases is aggravated and hastened by bromide medication, for moroseness followed by maniacal outbreaks are almost inevitable if the drug is pushed. Large doses should never be given in advanced cases, according to practically all authorities, and the writer is of the opinion that bromides should never be given in any dosage to such cases; he

has had several most deplorable cases of this type to treat and blames the long continued use of bromides before they came into his hands as responsible for half of the pathology and the hopeless state of these patients' mentality.

MASKING SYMPTOMS.

Hunt is of the opinion that bromide may mask the symptoms of mental disease just as thoroughly as do opiates in certain surgical lesions; thus the physician is deceived until a sudden mental explosion occurs and the use of bromides is discontinued too late to prevent disaster.

Toxic and exhaustion cases of epilepsy, it is commonly agreed, should never be given bromides; they develop very rapidly under such medication. This may be due to the fact that epilepsy is often associated with sub-thyroid secretion and over-activity of the thymus, in which cases throat or mouth infections are common. Such cases are benefitted by cleaning up the mouth and throat, giving small doses of thyroid and full doses of calcium salts, and never any bromides.

INTESTINAL CONDITIONS.

It is commonly observed that animal proteins are bad for the epileptic, inducing intestinal fermentation. In such cases appetite and nutrition are impaired by bromides. If administered at all, give bromides after meals. Asthma is often associated with, or aggravated by, intestinal fermentation, and a somewhat similar state is sometimes manifested in epilepsy, for suffocative bronchitis may occur, more especially in the cases receiving bromides.

SYMPTOMATIC MEDICATION.

Bromides are never curative in epilepsy, but as symptomatic medication they have their place in early and simple cases. When given, most authorities contend, there should be a reduced sodium chloride intake and the bromide dose should be small and not very long continued. Most of the cases seen by the writer are advanced ones and he never uses any bromide in their treatment. Perhaps the profession will not fully agree, but he dislikes to give bromide to any case, except transiently. Children react rather badly to bromides, and if attention is given to the general health a child

showing symptoms of epilepsy may entirely recover without one grain of bromides, while the case may be, and commonly is, aggravated if started on the usual bromide route. Sometimes a little bromide, especially a sodium salt, may be given transiently, with relief of aggravated symptoms.

Nitrites are of symptomatic value, especially an amyl nitrite ampoule by inhalation when an aura warns of an impending attack. We have seen cases in which this drug arrests most attacks if used in time.

Adonis has been urged as a remedy, principally by the maker of a proprietary preparation. We have tried it out thoroughly, with no marked result. The same must be said of ailanthus, a most disagreeable drug which depresses the nervous system. Thrush has advocated the use of horse nettle (*Solanum Carolinense*) in idiopathic epilepsy occurring in young adults. If pushed to effect this drug is sometimes of value, but it has been over-rated. Five-grain doses of monobromated camphor may be tried, for sometimes it is of value. The valerianates are symptomatically of value in certain cases and are worth trying. Antifebrin, antipyrine, belladonna, duboisine and other drugs have been advocated.

There being no drug specifically indicated in the treatment of epilepsy, the writer does not stress drugs as of more than symptomatic value; but he does stress rational case-management, believing that a careful regulation of the life and habits of the patient accomplishes a world of good. Keep constantly in touch with an epileptic patient, using as few drugs as possible, but building up the resisting powers of the system and promoting the general health, and one is often rewarded by seeing complete recovery, or, at least, a marked amelioration of conditions. The most important part of the treatment is the discovery of all underlying conditions which aggravate the epileptic condition, and then removing them.—T. S. B. in the *American Physician*

PREVENTION AND TREATMENT OF PUERPERAL INFECTIONS.

Summary and conclusions of W. Blair Bell, *British Med. Jour.*, May 14, 1921:

1. There must be an honest recognition by all who attend child birth that puerperal infection is almost always avoidable and that the appearance of it in any case that has been examined, or in which interference has been practised, is a serious reflection on the accoucheur or accoucheuse.

2. The remedy does not lie in better teaching, so far as practitioners, are concerned but in obedience to the dictates of conscience. No man can plead ignorance of asepsis to-day. The trouble is that imperfect asepsis is practised as a stop to conscience instead of complete asepsis as a real scientific safeguard.

3. Examination per rectum with the gloved finger should be practised in the case of the parturient women in preference to vaginal examination. Forceps delivery is far too common. Most women deliver themselves safely if let alone. Forceps delivery, when necessary, is a surgical operation and should not be conducted in insanitary surroundings.

4. All lacerations, not only those of the perineum, must be efficiently sutured.

5. Care must be taken to maintain the natural defenses of the patient.

6. The evacuation of large pieces of placenta and efficient antiseptic irrigation of the uterus should be practised in the early stages of infection of the placental site. All infected lacerations should be purified.

7. The employment of autogenous vaccines and polyvalent serums is often useful in cases of generalized infection.

8. Major operations must be performed, especially ligation of the veins in puerperal thrombo-phlebitis, without hesitation and in good time when indicated.

APPENDICITIS

Summary of J. E. Adams, in *Brit. Med. Jour.*, May 7, 1921.

If the case is seen within 24 hours of onset operate at once; under such conditions the case mortality is a fraction of 1 per cent. If the diagnosis is not decisive, treatment should be: (1) Fowler's position, (2) starvation, and (3) no aperients. The Fowler position insures any secondary peritoneal infection being confined to the pelvic peritoneum, which is undoubtedly more resistant and less liable to infection: (1) nothing should be given by the mouth; except perhaps cold water to assuage thirst, but even this can be controlled by saline rectal injections if a nurse is available; (2) no aperient should be given, because the desire is to inhibit peristalsis and thus ensure rest for the bowel. On the other hand, it is better not to give morphine, because the symptoms will then be masked. By waiting 24 hours any ordinary colic will have subsided under such treatment. If symptoms persist, then operate. The operation to be performed will depend on the condition found. If simple, the ordinary removal of the appendix. If an abscess is found, open and drain, and do the ordinary removal later. If there is an inflammatory mass, have in a tube and, six weeks or so later, do the ordinary removal. The actual performance of the operation should occupy as little time as possible.

PITUITRIN IN OBSTETRICS

The action of pituitrin may be likened to that of a thoroughbred hunter; a wonderful performer at times, but on some occasions extremely vicious and absolutely unable to be controlled. During the past few years reports of cases ending disastrously following its administration in even moderate doses have not been infrequent instances of ruptured uteri, of premature separation of normally implanted placentas, of impacted face presentations, of fatal asphyxia, of uterine tetany, and of severe cervical and vaginal laceration, force us to regard this obstetrical assistant as possessed of very dangerous potential powers.

Our object in calling attention to the dangerous results which may take place from the employment of this drug, is not to condemn its use altogether, but to advise great caution, and its use only in

cases in which no obstacle to rapid delivery exists. While pituitrin may have a definite and therapeutically valuable place in obstetrics, its use must be guarded even more carefully than is that of twilight sleep. It may be employed cautiously in cases of incomplete abortion up to the third month, but in the induction of labour at or near term, and in cases of slow or difficult parturition at full time, its employment with our present knowledge cannot be completely dissociated from much danger to both mother and child.—From editorial in *The Canadian Medical Association Journal*.

TREATMENT OF PSORIASIS BY INTRAVENOUS INJECTIONS OF SODIUM SALICYLATE

O Sachs (*Wiener klin. wochenschrift* 21st April 1921, P. 183) reports thirty-four cases of Psoriasis treated by this method. Bi-weekly injections of from 2 to 4 grams in 20 per cent solution for three to four weeks generally suffice, but the rash may not disappear for two to three weeks after the last injection.—J. F. SMITH.

ABORTION

Cases of septic abortion should receive no local treatment until they are at least five days fever free; the one exception being hemorrhage that threatens life. This nominal period converts a septic case into a so-called nonseptic, which has fewer days of fever, a shorter stay in the hospital, fewer complications, and a lower mortality. So-called nonseptic cases should be curetted as a routine, for forty per cent. of expectantly treated cases have to be curetted. Curettage insures an empty uterus and prevents subsequent bleeding.—D. S. HILLS in *Surgery, Gynecology and Obstetrics*.

CORRESPONDENCE.

HUMILIATION OF MEDICAL SUBORDINATES ATTACHED TO JAILS.

To the Editor, The Indian Medical Journal.

Sir,

Although the Medical Subordinate is bound to acquaint himself thoroughly with the Jail discipline a clear description and definition of which has been explained to him separately for his guidance, yet the Jail Manual directs that he should obey the orders of the Jailor (who is not the Head Officer of the Jail) in matters connected with the maintenance of discipline and order of the Jail instead of simply saying that he should comply with the directions given by the Jailor in matters of Jail discipline as has been done in the chapter in which the duties of the Jailor have been shown. In fact the simple direction that the Medical Subordinate should abide by the rules given in the Jail Manual in regard to discipline and order of the Jail would have sufficed. Moreover since the Superintendent in the Superintending Officer of the Jail and not the Jailor who has no authority, the Medical subordinate cannot be subject to the authority of that official. Fortunate it is for the Medical Officer that he has not been directed to obey the orders of the Jailor and learn discipline from him. On account of those wordings, the Jailors whose ideas are generally crude must be thinking the Medical Subordinate to be an insignificant man and are apt to exercise unnecessary and undue influence over him. This is possible especially in the case of young Sub-Assistant Surgeons. The duties of the Medical Subordinate are such as require him to check the most important work of feeding the prisoners which is done by the Jailor. It is also his duty to see that only the prescribed amount of work is taken from them and so on, and if the Jailor is allowed to think himself superior to the Medical Subordinate is it possible for the latter to check, as strictly as he should, the work of his superior? Most of the young Sub-Assistant Surgeons who are sent to work in Jail think it best therefore to work there with their eyes closed against anything and everything with a view to avoid incurring displeasure of the Jailors who, I know, do not hate or hesitate to do

anything in the Jail. Many instances can be quoted in support of the above fact. The present system of working is such that the Superintendent is likely to listen more to the Jailor than to the Medical Subordinate, even though the Civil Surgeon may be carrying on the duties of the Superintendent of the Jail. Further more it seems inadvisable and unnecessary to direct the Medical Subordinate to obey the orders of the Jailor when the former understands the discipline of the Jail better than the latter himself, and his sense of duty is keener. My experience is that the discipline in the Jails is satisfactory in respect of those points only which generally come to the notice of the visitors. In other points which are not likely to catch their eye, it is mostly unsatisfactory. As for the Jail work it is simple and the Jail Manual is so exhaustive that any blunt headed man can carry on the Jail work and maintain the discipline without any difficulty. It is a bit irksome and heavy only in the Central Jails where too it can be made easy by increasing the cadre of Assistant Jailors to a slight extent. The Jailors have no work at all anywhere. The real facts have been misrepresented to the members of the Jail Committee. I can say that a majority of the Jail officials have no capacity to understand most of the rules and regulations properly. The success in their attempt to get much more pay than what has been given to the qualified men in other departments and prove themselves to be the only fit and competent men for the Jail work to which they have given a huge form is, no doubt, praiseworthy. They have been lucky enough to get a good support from the Jail Committee as well. The qualifications shown against the names of most of the people in the departmental list are either nil or very poor. Even Compounders have also been able to improve their condition by joining the Department and have become Jailors, strange it is, that the Sub-Assistant Surgeons have been directed in the Jail Manual to obey the orders of such men. They ought not to have been humiliated to such an extent and in the face of such facts.

The Government have been generous in revising the pay of Jail officials twice or thrice in the mere hope of attracting Matriculates but the success has not been achieved as desired. Now the Jail Committee have recommended further increase of

pay viz from (Rs 120-350- to 200. 450 with the object of procuring under graduates and graduates for the Jail Department, and the result will have to be watched again for some years more. Pity they have not considered it necessary to suggest the grant of a small allowance to the Compounders of the neighbouring institutions for the work of those Jail hospitals in which there are no Compounders. From an economical point of view I would suggest that in small District and Sub-Jails Sub-Assistant Surgeons may be altogether replaced by Compounders as the Medical Officer is required to visit the Jail daily and the little work that has to be done there can be performed without any difficulty by a Compounder under his supervision. If this is done the Jail authorities will be able to save some more money from the head "Medical."

*Chapter V. page 17 rule 71:—*The Medical Officer has been directed to visit the patients in hospital daily, and examine prisoners complaining of illness and admit them, if necessary the hospital. Over and above this it is also written that this duty is not to be delegated to any native subordinate. From the insertion of the words "Native Subordinate", an inference can be drawn that the Medical Subordinate may prove to be dishonest or he may be incompetent. As for the question of his incompetency, the Medical Officer is to give his own opinion and can say whether he is competent or incompetent, but, for the point of dishonesty I take liberty to ask if Medical Subordinates have ever been found by the Jail authorities to be dishonest. This seems to have been written as a precautionary measure only. I can say that the suspicion is without any basis or reason.

In one place it is laid down in the Jail Manual that the Sub-Assistant Surgeon or an Assistant Surgeon holding medical charge of the Jail will get no allowance. In the first place it shows that these men can be appointed Medical Officers but they are to be treated as Baigaris in the Jail Department. and in the second, place, this has been written in contradiction to rule 71 page 17 of Chapter V in which the Medical Officer has been prohibited to delegate the duty of admitting prisoners to hospital, to any native subordinate. i.e, to say the same man who can hold medical charge of the Jail is not allowed to admit prisoners to hospital. In the Jail Department the Medical Subordinate is

treated very badly although it is known to every body, that he is entrusted by the medical authorities rather the Government with more responsible work in the dispensaries. His work in the Jail is open to the eyes of every body and not like that on the executive side where great precautions are really necessary. On certain occasions the Jailors admit and release prisoners in the absence of the Superintendent, and in most cases they (the prisoners) bring property with them.

The Jailors are required to produce before the Superintendent, all the articles purchased by them even though they may be of small value, but the sale articles manufactured in the Jail or of those produced in the garden are carried on by themselves and there is no check on such transactions. Cultivation is another piece of work which has been started in the Jails perhaps for experiments sake and is solely in charge of the Jailors. No precautionary measures against any foul play in such matters have been taken or suggested as has been done in the work of mere admission of prisoners to hospital, although so many sad occurrences have already taken place in the Jails.

The irregularities and blunders of the Jails can be known only by close observation and study, and they are such that they often escape the notice of the Superintendent. He is actually deceived in many matters and on many occasions. Jailors think that they are the sole masters of the Jails and they do there anything they like. Even in the Central Jails where there are whole-time Superintendents the Jail officials don't fail to adopt mal-practices. In the Jail, the Medical Subordinate is the only man through whom the occurrence of many undesirable events can be prevented, because other people are the Jailors' subordinates whose voice has to be suppressed by the Jail authorities very often from an administrative point of view. If anything is disclosed from those subordinates it is disclosed after a long time i.e., not till they think that they are sure to prove it, for they know that in the event of failure their ruin is certain. So in this interval none has any means to find out the mysteries of the Jail. The Medical Subordinate has already been disregarded and discouraged, and disregard to him naturally tends to limit his interest in the Jail affairs and is detrimental to the Jail.

The Medical Subordinate has to live in the Jail premises in the midst of the people whose habits and modes of life are peculiar, and in a house which is small and uncomfortable. There are two blocks in the premises of District Jails. One separate block is meant for the Jailor and another block is occupied by the Assistant Jailor and the Medical Subordinate together. He is not given such quarters as have been sanctioned by the Government, is treated like a foreign body there and meets with all sorts of inconveniences. He has no facilities which the Jail officials and especially the Jailors, enjoy because the Jail and the Jail Manual are theirs. They live like lords in the Jail premises and prisoners are, so to say, their slaves and warders etc., their private servants to do their work.

Economy is observed on the medical side only. A good-deal has been spent in raising the pay of the Jail officials but the allowances of the Medical Subordinates and the Civil Surgeons remain the same. Not only that, in consequence of some of the Jails having been made Sub-Jails, Civil Surgeons are given even Rs 20 instead of Rs.50 which they used to get before. How unsuitable and meagre this sum of Rs 20 is to those officers, has not been taken into consideration even in these days when the general control of the whole Jail Department has been vested in an officer of the Medical Department, I mean an I. M. S. officer. He has not taken care to arrange for the grant of an adequate allowance to the Medical Officers that is to say to the Civil Surgeons who are getting Rs 50 and even Rs 20 for the double charge of the Jails they hold. So, there is drain on the one side and great economy on the other in the Jail Department. Considering the nature of the work that the Jailors have to do in the Jail, and the qualifications possessed by them, this Department has been able to stand today, above all through the kind support of the Jail authorities. It is a matter of great pity that nothing has been done to improve the condition of the Medical Subordinates working in Jails. From the report of the Jail Committee it is evident that it is going to be worse in some respects than what it is now. The condition of the people working in Central Jails is even now, much worse than those working in District Jails. They are much harrassed unnecessarily, and any work reasonable or unreasonable is taken

those conditions and he cannot but develop all that is undesirable and revolting—cowardice, adulation and tottering sense of duty. The Sub-Assistant Surgeon cannot be an exception to the generality of human nature. Some have, of course, come off brilliantly, but it is due to their strength of character and intelligence which are not and cannot be the possession of an average man. Man is made by circumstances and equally true is its converse that circumstances make the man. The Sub-Assistant Surgeon is a creature of cruel circumstances and when he emerges out of them he is nothing but a ruined man. A strong statement indeed! He is ruined because the youthful spirits that moved him once to attempt a realisation of the ideal which he once held up in the mirror of his imagination, have gone for ever, never more to come. What is worse, the wreckage is terrible, since he in his struggle for mere physical existence, has to surrender his erstwhile determination, become a coward, lose his self-reliance and tremble at the slightest onslaught against him. In short, to describe him, in the graphic language of an Indian school boy, he becomes a regular "Crow Catcher".

Now, comes his turn to be posted to a decently big hospital, after a bitter experience of 8 or 10 years in the out of the way and uncongenial place. He is now nothing but a figure head in the new situation, doing things in a routine way and living chiefly for his bread. Those impulses of his which animated when he was young, have surrendered themselves unconditionally to the more compelling goddess of mere physical existence. By this time, he also becomes a father of goodly number of children and his last dying efforts to learn and to work hard receive an ever lasting grave in the sordid soil of a keen struggle for existence. With the pay he gets—even at the rate of the present enhanced scale—he is unable to live comfortably. At that age, without comfort, freedom from anxiety, which can be bought by money alone in the average man, he cannot engage himself in any lucrative pursuit of professional knowledge. His whole mentality is now so changed that he is trembling in fear of deprivation of his present position—in fact and in short, his stomach gains ascendancy over the once dominant mind and spirit. His "angle of vision" is changed. He becomes egotistic of what he boastfully calls "his

experience" and ekes out a line of life which is certainly not conducive to the solidarity and usefulness of our class. His one mania is to reach the selection grade or to become an Assistant Surgeon. With this end in view, he bases his conduct in life. I refrain from going into the details of and the justice in such a conduct, for the sake of union in our Clubs which is more essential to our joint progress than my frivolous, though true criticisms of such men in service. It is sufficient for one to know that most of our senior men had to pass through trouble and turmoil, that they were once moved by all that was able and good and that their lost battle should not unfix them from their original determination and make them move in an undesirable rut of life. When I say this, I am not unaware of considerable number of men who have passed through ordeals and yet maintain and practise those ideals which animated their hearts during the long years of struggle. They are the very quintessence of strength, of power and of wisdom of our class. They are the direct and visible symbol of aspirations that beat within the breast of the still rising young man. They are the best and living answer to the calumnious charges against the supposed inefficiency and want of intelligence in our class. Their existence is and has been the cause of general improvement and progress of our class. It is due to their efforts that an All-India S. A. S. Association with its net work of branches came to be born and live a useful career. Therefore, when I say that some of our senior men have given up their youthful hopes and powers of self-reliance I cast no aspersions against their character or mentality, but only bring to light the marked devolution in the wheel of progress, which is the direct and inevitable result of circumstances over which the average S. A. S. could have had no control and which make him, as it would with any average individual, what he is now. It is the purpose of this article to lay bare concisely how the conditions into which every S. A. S. is thrust into affect his progress and land him shattered, weather-worn and life less. Individually, every S. A. S. enters the battle field of service and comes out successful according to one's ability and talents; and the success or failure affects his own mentality. But a grave responsibility lies upon our Association and the medical administra-

Hospitals, arrived and was received by Rao Bahadur Daji Ramachandra, President of the Branch Association and Mr. Bhagwan Din, Chairman of the Reception Committee.

WELCOME ADDRESS.

Dr. Bhagwan Din then read the following address of welcome:—

Brother Delegates and Gentlemen, I offer you on behalf of the All India Sub-Assistant Surgeons' Association, Central Provinces Branch, a cordial welcome to this provincial town of Nagpur of historical importance. I am not unmindful of the fact that you have honoured our invitation by coming to grace our Conference at a great sacrifice and personal inconvenience, and I am sure your presence here will give us encouragement and strength to carry on the deliberations of this Conference to a successful issue.

Turning to the deliberations of this Conference, I request you to give me a calm and patient hearing in what I have to say. The parent Association of this Branch was established by our late revered and able General Secretary Mr. P. S. Ramachandraiar of Mysore Medical Service. It was while he was engaged in the Plague Commission in Bombay in the year 1906, that he laid the foundation of this Association with the help of Mr. Malwe and few other members of our Service. How Mr. Ramchandraiar worked to bring the Association to its present state is well known to us and the readers of the Journal of the Association which was founded and edited by him ever since the inception of the Association. Soon after, as I understand from my friends here, he paid a visit to Nagpur and with the help of the Sub-Assistant Surgeons of various dispensaries and of Mayo Hospital established a Branch here in which our present President R. B. Daji Ramchandra took a leading part. I think it was in December 1906 that he did so. The Branch has worked by fits and starts ever since, and it is during the last year when the burden of our grievances accumulated and the smarting assumed unbearable extensions and also inspired by the enthusiasm and fervour of our brethren in other Provinces, particularly those in U. P., that some of the younger members of our Association girded up their loins and came forward to make the Branch one of living interest and of useful purpose.

Men like me who have almost reached the end of their service could not but be influenced by the keenness of the enthusiasm of these comparatively younger men and I am sure I voice the feelings of all elder members of the service, when I say that it is incumbent on us all, to guide and lead these ambitious and intelligent youths without thwarting the candour and the intensity of their ambitions.

Referring to some of the many grievances under which we are labouring and which require redress immediately, the first and foremost is the question of status and the material well being of those on service. The men of to-day who are admitted to the Medical Schools after passing Matriculation stand a much closer comparison with the University graduates than did their older brethren. They have almost a similar course to go through, as have the medical graduates with the exception of few subjects of subsidiary importance, and when we come to look at the vast gulf that separates the two classes in realities of life, we begin to think it is only with the object of making a pretence of justifying the gulf that these minor differences in course are maintained and perpetuated. For a long time we have been clamouring for a five years' course, so that we like the diploma-holders of the British Corporations may have the right to be registered in the United Kingdom. But the authorities have often thought it wise, to perpetuate the inadequacy of the course, following the policy of "Hanging a dog by giving it a bad name," as it were. We are nominally registered medical men as we do not possess the rights possessed by the registered men in other countries, even in our land. We urge the authorities to take up this question very seriously and create a band of fully trained medical men from the school and thus foster the spread of independent medical profession in the Province. The present system has only been manufacturing qualified indentured men and thwarting the growth of independent medical profession. It is high-time that the matters are set right and India a country now set on its way to realization of full responsible Government by new reforms, is provided with a fully equipped and thoroughly trained medical profession.

3. To facilitate moral, material and social progress.

The other objects of the Association which can be worked out only with the help and sympathy of the Government have been frequently represented to the authorities with as great a force as we could command. We have met, I am very sorry to say, with little response from these quarters. We have been clamouring for a more efficient training in our Schools so that we may discharge our duties to the people and to the State in a more efficient manner. There is no gainsaying the fact that we are the only class of medical men accessible to the vast masses of ignorant people who constitute the major portion of our population. It is in the interest of those masses if not in our own that the Government should turn out thoroughly efficient men from the Schools. In reply to our requests for a thorough reorganisation and over-hauling of the training imparted in the Medical Schools the response that is frequently made by responsible authorities is that the public want a cheaper class of medical men, but what the people really want is a cheap system of treatment and not a cheap quack. A country that can well maintain the top heavy administration of the Imperial Services cannot with reason deny to the poor ryot the services of a fully qualified medical man. The human system whether of a King or of a cook does not differ and in fairness to these dumb masses it is the duty of those that are responsible for their wellbeing to see to their needs. Is it just to entrust their health to the care of a man whom Government themselves taboo as an imperfectly qualified man? We pray with all the earnestness that we can command that this question be taken up with the seriousness it deserves by the Hon'ble the Minister and the Inspector-General. This naturally needs the extension of the present four years' course to one of five years, bringing the curriculum in conformity with the minimum required for registration in the civilized countries. The preliminary which has recently been uniformly fixed in all Government Schools as Matriculation compares very favourably with the requirements of the British Medical Council and as such needs no raising. Of course the hospitals would need extension and improvement in order that suitable facilities may obtain for the practical training in all the professional subjects. The plea of poverty of

the country for not introducing these reforms would not stand in the face of the enormous expenditure that is being incurred in raising the salaries of the Provincial and Imperial Services.

The present system of awarding scholarships to students in Medical Schools is peculiar to this country. They are only an inducement to ensnare students so to say in the bondage of qualified indentured labour. This is very unjust. It is a wonder how the law supports such a procedure. The object of scholarship in my humble opinion is to foster the spirit of scholarships among students and not as in the present instance to have the services of the students insured. I do not know whether there is anything like our ten years' bond or in its default the penalty of Rs 1000 any where existing in any civilized land. The sooner such a system is stopped the better it is for the reputation of the Government.

The most pressing question that is engaging the serious attention of our class and in a responsible form causing a keen heart-burning is one of pay. At present a Sub-Assistant Surgeon starts with a pittance of Rs. 60 a month and looks forward to a gloomy maximum of Rs 150 attainable by only a fortunate few. A Sub Inspector of Police with much inferior preliminary qualification and a course of one year's training makes a better start and can aspire even to the post of D. S. P. if he has sufficient grit in him. So is the case with excise, post, telegraph, education and many other departments. But here in our own case we are to remain satisfied as "Sub-Assistant Surgeons" the whole of our life. Is it too much to ask that we might get encouragement and scope to work and discharge our duties by having something to look to as a reward for good work? Is it too much to ask that our scale should at least be half of what the Provincial Service men get? Considering the training that we receive and the work we are called upon to do, I am sure nobody with a reason can deny the justness of this demand. But it has always suited the authorities to give vague answers and shelve our request. We implore that this question may be soon taken up in the spirit of justice and sympathy and solved at an early date.

days, the exigencies of service kept you apart from one another, and there was no such thing as united opinion on matters concerning your common interests, and your social standing was on a lowly level. These conditions have changed very greatly for the better, and much of the credit of this is due to the unceasing efforts made by your Association. It has collected and summarised your desires and opinions, has voiced your ambitions, and has enabled you as a service to voice these desires and opinions in no uncertain terms. As individuals isolated from one another it is difficult and often impossible for you to formulate definite and clear opinions on matters affecting your interests, and you can well understand that the expressions of individual and diverse opinions are not likely to lead to definite and tangible results, whereas collective and considered opinions of the majority, properly expressed through your Association, are more likely to present a definite and clear issue for the consideration of the authorities. This, then is one of the advantages which membership of your Association presents to the individual, but it is pleasing to note that your aims as an Association are wider than that the Association should be merely a mouth piece for the voicing of grievances. You aim also at the moral advancement of your class, the encouragement of your social and professional progress, and the bringing about a better mutual understanding amongst your members, and last, but not least, the maintenance of the honour of your profession. Your Association is to be congratulated on the ideals which it has set before it, and on the results which it has attained during its comparatively short life time. The success of its efforts must be a source of gratification and pride to those who inaugurated, it, and who have been able to see the strong and healthy institution into which it has developed.

The Sub-Assistant Surgeon class has grown gradually from the earliest days of the British occupation of India, and from the beginnings of the Indian Army, under the old East India Company. As any thing of a regular service, however, it did not take any definite shape until the year 1860, when the service of Hospital Assistants was formed, and the needs of the civil population began to be met to a small extent. Prior to that year, and from

the year 1835 when a Medical School was first established at Madras, all the passed pupils were taken into the service of the Army. The training given at the Madras Medical School was of a very rudimentary nature. With the formation in 1860 of the Hospital Assistant Service and the recognition of the need to provide for the civil population by the establishment of civil hospitals and dispensaries, Medical Schools began to spring up in various parts of the country. The teaching in those days was carried on chiefly in the vernacular, and realising as you can do the difficulty in expressing scientific facts and theories in the majority of Indian languages you can understand that the attainments of the earlier Hospital Assistants were not of a high order. Few of them spoke English, and they were dependent upon a very small number of vernacular text books for their study. These text books were practically only primers and the theoretical knowledge culled from them was of a very meagre order. Similarly the clinical teaching in the hospitals attached to the Medical Schools had to be given in the vernacular, and there were no well equipped laboratories available as you have now-a-days. The wonder of it all was that so many of the passed pupils of those days turned out so useful as they did. Their practical knowledge certainly did not carry them much further than to qualify them to treat the simplest and the most common diseases by methods which were of a somewhat rule-of-thumb order, and their powers of diagnosis were very limited. Nevertheless many of them became very useful servants of the State and were highly respected by their superior officers and by the public. These were the men who brought before the profuse population the novelty of western medicine, and it was to them and is still to you, their lineal successors, that the bulk of the people of India look as the upholders and exponents of the science and art of modern medicine and surgery. Our own capital city of Nagpur was early in the field in the teaching of medicine, and became the seat of a Medical School in 1807. The men trained in this School were on passing out, designated as "passed medical pupils", and after a short probationary term of service under Government were promoted to the grade of 'Hospital Assistant', and provided with a salary of Rs. 25 a month if qualified in English or 20 if unqualified. I do not know if we have still with

us any of the pupils of these earlier days, but I am sure if any were to emerge from retirement and visit the Medical School at Nagpur today they would stand aghast at the curriculum of the modern medical student, and realise that things are not as they used to be in their young days. The old Medical School of Nagpur continued its work under primitive conditions until the year 1883, and turned out a considerable number of men, more indeed than the provincial Government was able to employ. It became a considerable drain on the provincial finances, and relief from this drain was sought by closing down the School and arranging for the recruitment of the provincial cadre of Hospital Assistant from the Patna Medical School with the aid of a system of scholarships. The course of the tuition was a 3 year one, and the preliminary educational standard required of candidates for admission was the passing of middle school examination. In 1896 the possession of Matriculation certificate was made compulsory, and the course of the Patna School was raised to one of 4 years, exclusive of one preliminary year spent as medical probationer in district hospital prior to joining the School. The passed students of the Patna School employed in the Central Provinces were now put upon a scale of pay of Rs. 25 rising to Rs. 55 if qualified in English, or Rs. 20 to Rs. 35 if unqualified. This arrangement by which Sub-Assistant Surgeons were recruited through the Patna School continued in the main till 1920 when they were recruited from various schools up to the time of the reopening of the Nagpur School as recently as 1914, various changes in the pay scale taking place meantime.

The first definite separation of the civil branch of the Hospital Assistants service from the Military branch took place in 1878, and the pay in the Civil branch was fixed on a lower scale of Rs. 25 to Rs. 55 for English qualified men, and Rs. 20 to Rs. 35 for those not qualified in English. In 1901 a senior grade on Rs. 70 was created. This scale continued in force till 1910 when it was raised to Rs. 30 to Rs. 100 and again in 1915 to Rs. 45 to Rs. 110 qualified, or 30 to 80 unqualified. Two years ago the present scale was introduced, and the old grades were abolished, and in their place two efficiency bars were introduced at Rs. 75 and 90. It is now possible for a Sub-

Assistant Surgeon who begins on Rs. 60 to rise to Rs. 150. You will see from this brief resume of the subject of pay that great improvements have been made, commensurate with the increasing standard of efficiency and of the cost of living, and that Government cannot be accused of neglecting the interests of the Sub-Assistant Surgeons. In the various Medical Schools in India today, the instruction given is much more detailed and extensive, both on the theoretical and practical sides than was the case in the old Hospital Assistant days. A much better training is given, and Government offers a much better salary to the product of the schools. In addition to pay charge allowances are given. The extent to which the terms of service have been appreciated of recent years is illustrated in the number of applications received for admission into the Robertson Medical School. Of would be private students 20 applied for admission in 1917, 29 in 1918, 46 in 1919, 97 in 1920, and no less than 112 in 1921. Of applicants for stipends the figures in the same years were: 115, 113, 95, 120 and 63, exclusive of a large number sent in too late. These figures go to show that the profession of medicine is undergoing no diminution in popularity as a career. Diplomates of the Medical Schools cannot all be provided with Government posts nor is it desirable that these posts should absorb them all. One of the great needs of this country is the development of an independent medical profession. For the greater part in the past Government has had to lead the way, and by the establishment of dispensaries and by permitting its medical staff to engage in private practice has enabled large sections of the general public to have the benefit of western medicine and surgery. This, however, as you know does not go very far to meet the needs of the country, and there is much scope for the private practitioner in most parts of India. Hitherto the private practitioner has tended to establish himself in practice in the large cities, and in many of these the supply is even in excess of the demand, and some find it not very easy to make a living, competing as they do with not only their own medical brethren but with innumerable vaidas and hakims. I have just said that Government service cannot absorb all the diplomates of the Medical Schools, and I want you also to realise that the large towns cannot completely absorb the surplus. When

is now about to begin. See that you realise the truth of this, and regard your work in hospitals, dispensaries, or in private practice as educative and not merely remunerative." No one should enter the medical profession merely with the idea that it will provide him with a living. Our profession is to a great extent an altruistic one. We live and act for the interest of others, and our greatest aim should be to so equip ourselves as to best enable us to help the sick and suffering. No one who is not imbued with a great ideal of this spirit will ever make a good and successful physician or surgeon. This spirit, combined with diligence in the gathering of sound experience on top of a sound training, is what makes for success in all respects in the medical profession.

No doubt you will think that this is all very well but under the conditions of Government service does not appear to lead anywhere and that the principles of altruism are very praiseworthy, but you would like to have some definite reward available for those whose adherence to these principles and devotion to their duties and improvement in their professional equipment have resulted in their being recognised as standing out from the rank and file of your class. Your Association has been busy of late representing the claims of the best Sub-Assistant Surgeons to promotion to the rank and status of Assistant Surgeon, and I have no doubt you have been expecting me to say something on this subject. Well, I have no official message to give you on the point except to remind you that appointments of this sort are not made to fill any supposed vacancies. No such thing as a vacancy in this respect actually exists, and such appointments are made, under the rules at present in force, only when suitable candidates are forthcoming in the Sub-Assistant Surgeons' cadre. There are no doubt many who consider themselves worthy of this promotion, but you will admit that they are not always the best qualified to judge of their own fitness. It is necessary for me in my official capacity to be careful indeed in my choice, and you would not, I am sure, ask me to exercise my prerogative in this matter until I have had sufficient opportunities of knowing your capabilities. I trust that you will have confidence in me, and leave me to deal justly by you in this as in all matters which come within my official purview, and that you will believe me when I say that I have your interests at

heart, and will always be ready to help on your interests as far as my duty to Government allows. Now, while this promotion is one of the desires which you as an Association have expressed, let me for a moment remind you of its effect. An Assistant Surgeon promoted from the Sub-Assistant Surgeon class has responsibilities not only to Government but also to the general public. His promotion is an empty thing if it confers only the privileges and does not also carry with it the responsibilities of such a promotion. If a Sub-Assistant Surgeon becomes, by promotion, an Assistant Surgeon Government has the right to expect that he is both able and ready to carry out all the duties of his new rank. He becomes responsible for the professional care of a higher and better educated grade of Government servant, more is expected of him as a sanitarian, and he is expected to be a surgeon, able to undertake major operations at any moment. Has his past service as a Sub-Assistant Surgeon qualified him to discharge these duties efficiently? Is he likely to profit quickly by the opportunities he now has of bringing himself up to the necessary standard? Has he shown any special aptitude for surgery? Has he taken any special interest in sanitary matters? These may sound rather hard questions, but they are important. I have been sorry to see that your Association has shown antagonism towards the licence in public health recently instituted, and opened to Sub-Assistant Surgeons, and has put forward a demand that the D.P.H. should be open to them. I do not know if the Association has realised that the D.P.H. at Lucknow, which was instituted by the State Board of Medical Examinations of the United Provinces, has now been taken over by the new Lucknow University so that even its first holders will receive their diplomas from the University and not from the State Board, while the L.P.H. remains as originally projected a licence issued by the State Board, and open to such Assistant Surgeons. As a University diploma the D.P.H. can only be open to University graduates who have complied with all the conditions as to preliminary educational standard, and professional education. Why then should Sub-Assistant Surgeons neglect the opportunity of the hall mark of education in public health which is open to them, and which will not only evince their desire for improvement in their professional qualifi-

knowing the nature of their illness, and they do not know the difficulties which may have to be surmounted before they can be cured, or of the delays which are often inevitable. It is therefore your duty to deal with patients in a kindly and sympathetic manner, and to gain their confidence by your manner of dealing with them as well as by the exercise of your professional skill. Strive always to attain to the ideals of your profession. Avoid jealousies between one another, and try to realise that if another is cleverer and more popular than you are the fault is not his but rather the credit. Conduct yourselves in your relations towards your professional brethren as you would expect them to do under the same circumstances towards you.

And these few precepts in thy memory
See thou character. Give thy thoughts no tongue,
Nor any unproportioned thought his act.
Be they familiar, but by no means vulgar,
Those friends thou hast, and their adoption tried,
Grapple them to thy soul with hoops of steel ;
But do not dull thy palm with entertainment
Of each new hatch'd, unfledged comrade, Beware
Of entrance to a quarrel, but being in,
Bear't that the opposed may beware of thee.
Give every man thine ear, but few thy voice ;
Take each man's censure, but reserve thy judgment.
Costly thy habit as thy purse can buy,
But not expressed in fancy ; rich, not gaudy ;
For the apparel oft proclaims the man,
Neither a borrower nor a lender be ;
For loan oft loses both itself and friend,
And borrowing dulls the edge of husbandry.
This above all : to thine own self be true,
And it must follow as the night the day,
Thou canst not then be false to any man.

Dr. Narsingh Rao then thanked the President and the visitors for the trouble they had taken to grace the Conference.

The guests including His Excellency the Governor were then entertained at an "AT-HOME" party and the functions of the 1st day were thus brought to a close.

The Conference met again at 2.20. P. M. on 21st Nov. under the Presidency of Lt. Col. T.G.N. Stokes I. M. S., Director of Public Health, C.P., and the following interesting clinical papers were read and discussed. 1. Infantile Convulsions By Dr. Bhagwan Din. 2. Infantile Mortality by Dr. M. B. Bobde. 3. Treatment of Diabetes By Dr. K. P. Sen Gupta 4. Treatment of Pyorrhoea Alveolaris—its signs and symptoms by Dr. G.R. Dongre 5. Relapsing Fever by Dr. I. B. Basu 6. Renal Cyst By Dr. Ramkrishna. 7. Anaesthetics by Dr. Bansod 8. Suprapubic Cysto-tomy by Dr. Narsingh Rao. 9. Organo-Therapy by Dr. T. P. Tiwari. 10. Ankylostomiasis by Dr. R. G. Tiwari. 11. A Case of Snake Bite by Dr. Mitra.

At 7 P. M. a very interesting magic lantern demonstration on Hook-worms was given by Drs R. C. Tiwari and G. P. Norkherker.

At 8 P.M. the Subjects Committee met and the resolutions were framed.

The Conference met for the 3rd. time on 22nd. November at 2.30 P.M. under the presidency of Rao Bahadur Daji Ramchandra and the resolutions, 27 in number, were passed.

All along the delegates and the office bearers showed great enthusiasm and the Conference was a great success.

THE MINISTER'S SPEECH

The Hon'ble the Minister in Charge of the Medical Department while addressing the Provincial Conference said :—

GENTLEMEN,

In response to a call from your President Col. Young, I rise to speak a few words affecting your interests. Let me in the first instance thank you on my behalf as well as on behalf of other visitors for the honour you have done us by inviting us to be present on this occasion. Gentlemen, you must naturally be expecting me to make some announcement on the various points mentioned in the addresses delivered by your President and Secretary. For obvious reasons I am unable to do so now, but I hope that on that account you will not be disappointed. My

and therefore I cannot say which of the two systems is better, more advanced and yet less costly. Gentlemen of your profession are qualified to judge the relative merits of the two systems. I ask you, gentlemen, if you are not pinned down mainly to one system and if you have got opportunities and liberty even though you possess the will and the ability, to try the ancient system of your motherland.

In the Government service you have some advantage which at present some private practitioners are not in a position to enjoy. This difficulty, however, is sure to disappear if a large number of medical practitioners establish independent business. By independent business you will help yourselves, you will help your country and your Government in a much better way. For some time it would not be wrong if the Government were to help you with subsidies or otherwise to get a footing in life. But your ultimate aim must be to be independent as soon as possible. When you become independent you will have the first claim on Government to be their agents for the distribution of the medical relief to the poor and the needy.

One of the objects of your Association is to establish harmonious relationship not only between men of your profession but also with those who belong to other professions. I cannot say how far your Association has succeeded in fulfilling this object. One is apt to get an impression from your representations and addresses that owing to different scale of salaries and other concessions a sort of internal jealousy has arisen amongst Government servants. This is one disadvantage of Government service. In private and independent profession there is a healthy rivalry which tends to the betterment of prospect and development of science, while in Government service it tends to the creation of internal jealousies.

All qualified for different professions cannot take to independent business but men of your profession certainly can. I don't think it wise and proper for men of a respectable profession like yours to compare their lot with men of the police and the excise departments. I don't think any one of you would envy the lot of the police or the excise officers. There is no comparison between your duties and the duties of the excise and the police

officer. If the police and the excise officers get more salaries it is because they are not allowed to earn money by private practice and also because they have to discharge most unpleasant duties. They have generally to deal with less responsible and less respectable classes of people and consequently their work is more arduous. On the other hand you are at liberty to earn money by private practice. You have to deal with a more respectable class of persons and above all yours is a work of philanthropy and labour of love and honour for the benefit of the poor or the needy public. If you calmly and patiently consider this aspect of your relative position you will at once be convinced that the remuneration in cash which the police and the excise officers get is nothing in comparison with your remuneration even though yours is less in amount. You have referred to various other matters prominent among which is, you are required to do a considerable amount of administrative, clerical and miscellaneous work and consequently you are not able to devote as much time as you ought to to professional or technical work. As at present advised I am inclined to think that as far as possible a large portion of your time and energy ought to be spared for technical and professional work. It may be possible to relieve you to a large extent if not wholly of your miscellaneous duties and financial responsibilities if the management of the dispensaries is transferred to Local Bodies. This transfer of dispensaries to the Local Bodies is now under consideration of the Government.

Gentlemen, if I have rightly understood you, you seem to think that the present system of giving stipends to students and binding them to serve Government for a certain number of years is not desirable in the interest of the profession. I shall examine this question. Stipends were necessary in the beginning but they may not be necessary if the Medical School has grown in popularity and attracts a number of boys in excess of the available accommodation or in excess of the prescribed number of stipends. If there is a larger demand for medical education it may be necessary to provide more accommodation but with the growing demand for education it may be appropriate to put an end to the stipendiary system and substitute in lieu thereof scholarships to be awarded to the poor but

deserving persons. This change might obviate the necessity of taking bonds for service.

To you, my young friends, the students of the Robertson Medical School, I venture to give the same advice as the suggestion I have placed before the members of this Association for consideration. Your aim and ambition from now must be to lead an independent life after you leave the School by qualifying yourselves for the profession for which you are being trained at present. I think I shall be failing in my duty if I were not to tell you that every one of you cannot expect to be entertained in Government service. Many of you will have to earn your livelihood and fight the battle of life by hard and honest work in an independent profession. Although some of you may have to combat some difficulties in the beginning in starting an independent business, in the end you will find yourselves more happy and comfortable in that business than in Government service. Hereafter the aim will be to give the best possible education to the younger generation to qualify them for independent business and not simply for Government service. I have thought it necessary to give you this advice as from a representation that I received recently from you through your Superintendent I gained an impression that you have from now been thinking of Government service and that you are quite innocent of the advantages of independent business.

Gentlemen and students, I again thank you for the opportunity you have given me in placing my personal views before you. I hope you will give them earnest consideration and if you do, as I have no doubt you will, I trust that you will find yourselves in agreement with me.

[Note.—The full text of the resolutions passed at this Conference will be published in our next issue. Ed. I. M. J.]

THE Indian Medical Journal

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JANUARY, 1922.

[No. 1.

MEDICAL EDUCATION AND RESEARCH.

IN spite of the great progress medicine has made for the last quarter of a century and its practice having been rendered more effective by becoming more exact and scientific, still much of what is considered progress is only a change and movement with no clear understanding of what constitutes science as applied to medicine. We find medical men are devoting themselves to the intensive study of a portion of the subject and medicine is breaking up into a great many specialities and it is taken for granted that progress is being made in these directions. Medicine is, indeed, becoming a subject so complex and even so confused as to be beyond the comprehension of a single individual, but the fact that it is becoming so complex should rouse the suspicion that its pursuit may be on wrong lines. All sciences are governed by laws of Nature. The discovery of these laws tends towards simplification and renders the sciences easy of comprehension, and serves to guide their pursuit towards a definite goal by methods systematic and orderly and based on definite principles. The inability to recognise these laws obscures the issue and renders the pursuit haphazard and disorderly and the result will be a confusion. For instance, when a new method is adopted or a new discovery is made, there invariably follows an exaggerated opinion of its importance and its significance. Being imperfectly understood, its application, though, on the whole, beneficial may defeat its purpose and do actually harm.

From this consideration it will be realised that the first step in medical research is the recognition of the symptoms of disease, the arranging of symptoms into clearly defined groups, so that one disease may be separated from others which it may resemble. The first step in research is, therefore, the differentiation of disease by means of the symptoms they produce.

The clinical observer may have discovered the disease and its cause. However his methods fail to carry him so far; then he must recognise his limitations and turn to the laboratory worker.

To all intents and purposes the teaching of the student is limited to diseases after they have damaged the body and have produced manifest symptoms. The wards, where the student receives most of his clinical education, are filled with patients suffering from the later stage of disease. The only place where the student can see the type of disease which will affect the great majority of his patients is in the out-patient department. This is always under the charge of the least experienced members of the staff. If it is borne in mind that the early stages of disease are the most difficult to detect, but the most hopeful for cure, common sense would dictate that here is the place for the most experienced physician and for the specialist with his laboratory.

We see that for research to investigate disease in an ordinary and systematic manner it is necessary that the first step should be taken by the clinical observer who should detect the symptoms of disease, differentiate one group from others it may resemble. He can then recognise the kind of help he requires for the further elucidation of his problem and can prove to the laboratory investigator his problem precisely and clearly defined. He must not limit his researches to the study of the disease when it has damaged the body or caused death, but must recognise the symptoms at a period which will

bring him close to the time of the onset of the disease in order that he may recognise the circumstances that favoured or caused the disease.

If education would deal more with principles and less with details, the general practitioner would be able to apply these principles in his practice. When the laws governing the production of symptoms are recognized the discovery of one symptom will guide him to the search for others, so that the groups of symptoms which are peculiar to the different diseases can be distinguished. The spirit of the investigator will be aroused and the life of the general practitioners—often so dull and monotonous—will be transformed for each patient will become the object of a living interest.

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No pains were spared by the Bangalore Reception Committee to make our Annual Conference a huge success. Delegates poured in from far and near, and several important subjects received earnest attention and suitable resolutions were passed. We propose to combine the February and March issues as usual and issue the same as the Conference Number, in which the full texts of the speeches delivered by the Chairman of the Reception Committee and the President, as also other important papers read at the Conference by distinguished personages on important subjects will be published along with the resolutions passed. A short account of the Exhibition also will be attached thereto. We will deal at length on the Conference proceedings in the combined issue.

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As usual Value Payable cards will be despatched from the Treasurer's office direct towards the current year's subscription, and we earnestly request our subscribers to honour the same.

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Elsewhere we publish the full texts of the speeches delivered at the First Annual Conference of the Sub-Assistant Surgeons in C. P. and Berar under the presidency of Col. W. Young, I.M.S., Inspector-General of Civil Hospitals. The speeches deserve more than passing notice and we propose to deal with them at length in our next issue.

NOTICE.

The Sixth Provincial Conference of the All-India Sub-Assistant Surgeons' Association will take place at Cawnpur on 25th and 26th February 1922. All are cordially invited to attend.

Ram Narain Lall,

Provincial Secretary.

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SELECTIONS.

SEPTIC (NON-VEREAL) INFECTIONS OF BLADDER AND KIDNEY IN GENERAL PRACTICE

BY

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I have been invited to introduce this subject from the point of view of one who sees these infections in general practice, *i.e.*, one who ought to be favourably placed to observe their beginnings, and to be in continuous touch with their clinical developments. The advantage of such a viewpoint is that one may limit oneself to a general and superficial survey of the clinical field; its limitations will be sufficiently apparent when you have heard the more intensive and specialised statements which my successors in the discussion are so eminently qualified to submit.

I wish further to confine my sketch to the infections associated with the bacillus coli communis, for two reasons; firstly, because these being by far the most frequent are clinically the most important; and, secondly, because a too intimate personal acquaintance with its morbid action has heightened my respect for this refractory parasite, and focussed my interest upon its behaviour.

One may ask at the beginning in what manner is it that such a class of micro-organism, normally a harmless and useful saprophyte dwelling and operating in the large intestine, quits

its ordinary nidus, and having left it acquires in various more or less remote sites a noxious and often dangerous character? On clinical evidence alone, it is probable that its modes of invasion of neutral territory in the kidney and urinary tract are not single but several; it is a catholic filibuster. Thus it may migrate from the colon to the kidney by the correlated vascular or lymphatic routes; it may ascend from without by the urethra to the bladder, and by the ureters to the pelvis and the calyces of the kidney; or it may reach those regions through the general circulation, as the local phase of a pyæmic condition; but this last mode is much more characteristic of streptococcic infection. Some of these points I shall illustrate subsequently. As to the second part of the initial query, I would suggest, in a sentence, that just as the passage of a culture through various special media or certain susceptible hosts exalts its virulence, so the result of implantation upon new tissues may develop the morbid properties of the bacillus coli.

The mere detection of coliform bacilli in the urine does not in itself prove the existence of a morbid infection. There are cases in which a bacilluria may indicate no more than the elimination of micro-organisms from the body. Such cases of bacilluria demand further investigation before it can be determined whether the kidneys and urinary passages are unaffected, or whether such elimination is combined with a lesion of these organs. I had a patient whose urine for fifteen years was on examination invariably found to be opalescent with bacteria, which on several cultivations proved to be purely coliform bacilli. This patient suffered concurrently from a persistent condition of colitis. As the result of metabolic errors in the colon, the coli bacilli had probably multiplied in excess of the safe ratio; the weakened mucosa must have permitted their entrance into the blood and lymph vessels of the intestine, whence they were conveyed to the kidneys, and these organs must have acted as neutral eliminators of the bacilli. These caused no symptoms, subjective or objective; they were apparently creatures of passage. The *denouement* was not related to their presence; the patient perished tragically in a motor accident.

The lesions of the kidneys and the urinary tract dependent upon infection by coli organisms are cystitis, pyelitis, pyelonephritis and pyonephrosis. Two or more of these diseases may, of course, exist in combination or sequence, but they may usually be differentiated by their respective symptoms.

The age and sex incidence of these infections is of considerable importance in diagnosis. They occur with almost equal frequency among the more comfortable and protected classes, and among the less favoured sections of the people—a fact which suggests that the well-to-do are relatively the more susceptible class. During the last five years I have made notes of 34 cases of proved infection. These may be classified as follows:—

Simple cystitis.—Three males, aged 22, 40, 47; five females aged 31, 35, 37, 40, 71 (three of these were pregnant women).

Pyelitis (generally acute, but including some remittent and chronic cases).—Two male children, aged 5 weeks and 2 years; twelve female children, ten of whom were under 1 year, one aged 2 years, and one 4½ years, four male adults, aged 36, 39, 44, 62; five female adults, aged 34, 38, 40, 52, 60, of whom one was pregnant.

Pyelonephritis.—Three males, aged 7, 21, 63 (these all died, and were the only fatal cases in this list).

Pyonephrosis.—None.

It is, of course, unsafe to generalise from such limited data; but the following opinions, based on the facts adduced, seem to accord in the main with conclusions arrived at by more experienced observers.

Simple cystitis is rarely found in children and adolescents, but is comparatively frequent in adults of all ages.

Pyelitis is the most common of all these infections. Female infants are the most susceptible to this disease. It is infrequent in adolescents and young adults, but re-appears in middle life and senescence, both sexes being equally susceptible.

Pyelonephritis is the most dangerous and fatal manifestation. My cases were all males,

Pyonephrosis from this cause is probably infrequent.

I do not propose to enter upon a full analysis of the symptomatology of these affections. It will, I think, best befit the conditions of my brief if I give a short record of certain cases in my own experience, which I have selected in order to illustrate some specially interesting points in origin, diagnosis, and treatment.

CASE I. *Cystitis* (J. H. Y., male, aged 40 years).—I first saw this man on 23rd October, 1919. His proposal to a life insurance office had just been declined on account of "kidney disease," this unauthorised communication having been made to him by the medical examiner. On the date of my interview with him he presented no symptoms of nephritis. His urine was scanty, neutral on passage, but becoming rapidly alkaline. It contained a moderate number of pus cells, and numerous bacilli coli, many of which were in clumps. A trace of albumen was noted, but no casts or other renal debris. The odour was unpleasant. There was no lumbar pain or tenderness, and no history of fever or rigors. The other organs were quite healthy. His only previous illness occurred during army service in Flanders, in September, 1918, when he suffered from paratyphoid. Other members of his mess had been similarly affected about this time, although he himself, and at least some of the others, had been inoculated with T.A.B. vaccine within twelve months previously. The hospital authorities had suggested the drinking of light beer as the cause of this epidemic. He recovered quickly from this Service illness, and continued well until the middle of September, 1919, when he played in a hard game of rugby, and subsequently supped more well than wisely. For some days after he became conscious of some discomfort and frequency in micturition, but paid little attention to these symptoms, which had wholly disappeared before his insurance examination. I advised rest from physical exertion, a free fluid diet for some days, and the taking of alkalies. These made no impression upon the signs in the urine and trial was then made of hexamethylenetetramine salicylate. In a week only a few pus cells were noted in the microscopic field, with a great reduction in bacilli. Ten days afterwards no pus was found, but bacilli were still noted. The drug was continued. A specimen of urine examined two months later showed no pus cells

and no bacteria; bacteriological examination was negative in respect of coliform bacilli.

I am inclined to doubt the diagnosis of paratyphoid in this case. It seems more probable that the mild epidemic referred to was due to infection by some other coliform bacilli. I have found that in 1915 the attention of the French and Belgian military medical staffs was drawn to the occurrence among the troops of the north-western line of cases of gastro-intestinal disturbance, as the result of drinking the light beers of local production. A proportion of cases was associated with bacilluria. The result of investigations was to show that in many cases these beers contained notable quantities of bacillus coli communis. In J.H.Y.'s case the etiological sequence appears reasonably clear; a primary infection due to beer containing bacillus coli; a relative recovery; a gruelling game (he was out of training), followed by an alcoholic evening, and inducing a renewed activity of the organisms in the bladder, or a diminished resistance of the vesical mucosa.

CASE II. *Pyelitis* (F.G., female, aged 2 months).—This is a mild typical case of pyelitis. On 2nd August, 1919, a baby girl, lying out of doors in a perambulator, was crying gently; she suddenly ceased, and the nurse going up to her found her in a "fit." Asked to describe more particularly, she stated that the child was "shaking all over and her lips were black." Later in the same evening she developed a rigor, the temperature being 103° F. The urine was acid, and contained a small quantity of pus with albumen and bacilli. There was no subsequent rigor. Potassium citrate was at once given (grs. iv every two hours). The baby had been breast-fed, and the maternal milk was especially rich. The interval between feeds was lengthened to four hours, and an ounce of whey was given just before suckling. During the interval water and occasionally barley water were administered. The temperature continued high, with some remissions, for three days. The only other symptom was a mild restlessness. On the fourth day temperature became normal, and continued so. The treatment was maintained for a fortnight without change. The urine had then been cleared of pus, bacilli and albumen. Ordinary breast-feeding was resumed, but the urine was kept alkaline until the end of the fourth week. Examined on 2nd November

1919, it was perfectly normal, cultivation giving a negative result.

CASE III. *Pyelitis* (A. C. M., female, aged 5 months). This child was healthy at birth, and weighed 8½ lb. At three months she weighed 13 lb. She was bottle-fed on "Sister Laura's" Food. In July, 1920, she was taken to the seaside, and became unwell, the diagnosis of the local adviser being summer diarrhæa. She continued ill, and I was asked to visit her on 21st August. I found her very sharply ill; temperature was 103.5°; pulse was weak and 140 per minute. She was shrunk and extremely restless, and whining continuously. There was a history of a rigor every second or third day. She vomited occasionally, but not every day. The urine obviously contained pus. She was immediately on my advice brought home by motor car. Treatment was begun with pot. citrat. in full doses. On examination, the urine was found to contain many pus cells, abundant bacilli, and distinct albumen. The stools were four to five per diem, mushy, and putty-coloured. Diet consisted for four days of barley water whey, albumen water, and pure boiled water. On the fourth day temperature fell to normal, and became irregular for three days more. A slight relapse of fever occurred during the twelfth to fourteenth days; it was again normal till the eighteenth day, when it rose to 101°, falling in twelve hours to normal, and keeping subsequently a normal range. The urine, at first acid, became alkaline on the fifth day, and this condition was maintained by means of pot. citrat. for one month in all. Thereafter the child's recovery pursued a straight course. At 6 months of age she weighed 7½ lb., and at 7 months 11 lb. She has been under my observation up to the present date, and has remained in sound health.

Such cases as the two preceding seem to be most reasonably accounted for by presuming an ascending infection. The closely applied napkin converts the child's sacro-pubic cleft into a cloaca, from which invasion (by faecal bacteria) of the urinary tract might readily occur. The ready response to treatment also seems to favour the theory of a local and direct rather than a systemic and circuitous infection in these simple cases.

In both cases, also, interrogation of the mothers and nurses elicited the fact that certain premonitory indications of urinary disturbance had preceded the actual onset of the disease. Thus, in Case II, it had been noticed that for two or three weeks immediately before the illness the child had been almost always wet with urine, and that there had been unusually frequent stools. In Case III the nurse had observed a frequent "shiny" appearance on the napkins for a week or two; this was later found to be a discharge of pus.

CASE IV *Pyelitis* (J. K. R., aged 5 weeks).—I had seen this child regularly from his birth on 2nd January, 1917. He was the first-born, weighing 9 lb. He was breast-fed for one week, when the mother's supply failed, and was replaced by humanised cow's milk. He was in charge of an intelligent, fully-trained nurse. About the third week she had noticed a faintly unpleasant odour from the urine. Intestinal action was normal. On 6th February he became restless and feverish, with a temperature of 102°. He showed on that evening a slight general trembling, not amounting to a rigor. The urine was acid; it had no unusual odour, the slight factor having disappeared a day or two before. A very few pus cells were noted, with numerous bacilli. Diet was reduced as in Case II, and pot. citrat. was given in doses of gr. iv every two hours for six days. Temperature fell to normal on the third day, but bacilli were detected in the urine until the end of the third month. In other respects his recovery was uneventful.

For some days prior to the birth of the child the nurse had been diligently practising on her own account an elaborate antiseptic toilet of the expectant mother's nipples. They were frequently washed with hydrogen peroxide and massaged with carbolised vaseline. It is quite probable that this unnecessary technique had a bearing on the origin of the infection, which in this case I interpret as an invasion of the kidney from the blood or lymph streams. A baby starts its career as a sterile subject, but in a few hours it acquires a dower of bacteria, principally from the skin of its mother's nipple. These play a most important role in the later processes of intestinal chemistry. But in the case under consideration Nature's beneficent bacteriological intentions

104°; daily rigors occurred: severe pain developed in the right lumbar region—an obvious case of recurring cystitis with pyelitis. He was instructed to drink freely of bland fluids, and was given full doses of alkalies and saline purges. The pain was treated most successfully with 10 gr. of aspirin every four hours, as opiates caused intense sickness. Much relief was also obtained at times from hyoscyamus and uva ursi. The temperature fell below 100° on the 10th day, but rose sharply on the eighteenth day in response to the complicating development of an epididymitis on the right side. Pain had almost disappeared after the first week, but dysuria continued in some measure for several months. During the next year and a half he suffered from several relapses of short duration; these were always relieved by the measures indicated. A more severe recurrence followed an influenza in December, 1915. This lasted for four weeks. During the whole of this time the urine contained pus—usually a very few cells being noted in one field—and coli bacilli. A course of autogenous vaccine was begun in January, 1916. In May of that year the urine was found to be free from bacilli, and he has had no subsequent illness referable to that organism.

For many years he had suffered from constipation, occasionally with the passage of mucus. The initiation and course of the illness suggested that it fell within the cycle of causes associated with faulty intestinal metabolism.

I refrain from citing any instances in which complications demanding surgical aid have arisen. These include cases of pyelonephritis, pyonephrosis, and cases connected with prostatic obstruction. Such cases will be more satisfactorily discussed by the surgical specialists who are to take part in this discussion.

I desire finally to emphasise some considerations relating to treatment.

1. *Prophylaxis*.—Early recognition of premonitory symptoms is most important, especially in infants. Thus, any departure from the normal conditions of intestinal action should be observed and dealt with. An unusual frequency of micturition, and the development of an unusual odour in the urine, are occasionally found to precede an attack of pyelitis, and may

serve as fingerposts warning of the wrath to come. And in regard to children also I would urge the necessity for the earliest training in sound and cleanly functional habits—a matter often ignored or despised. A good nurse and an intelligent mother can exercise much more educative control in this respect than is commonly practised or even believed.

2. *Diet*.—It is of consequence to lessen the amount and dilute the quality of milk in feeding these cases. Free internal lavage of the urinary channels is of prime importance, and not merely in the acuter phases; weak tea, barley water, alkaline table waters, are all valuable. These should be followed by a diet rich in carbohydrates; extractives and other foods of high nitrogenous content should be excluded for months.

3. Alkalinisation of the urine should be immediately attempted, potassium citrate in large and continued doses being the agent most frequently successful in relieving distressing symptoms. If intestinal evacuation is over-excited by this salt, alkaline bicarbonates may take its place.

4. In a proportion of cases alkalinisation proves ineffective in action. These cases are often amenable to the action of one or other of the urinary antiseptics of the formaldehyde type, the best of these, in my experience, being hexamethylenetetramine salicylate. This drug is well borne over long periods of administration; and it is usually unnecessary to combine its use with the acid phosphate of sodium, as the liberated salicylic acid renders the urine acid with considerable rapidity. The offensive odour of the urine is also controlled.

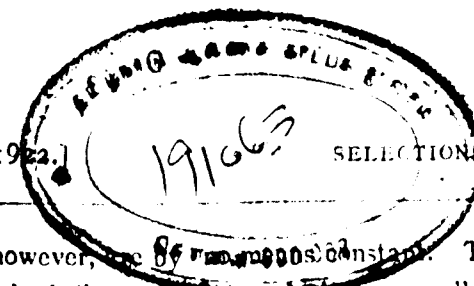
5. Regular free action of the intestines is an indispensable part of treatment. There is little doubt that the infecting bacilli develop in the intestine, by whatever conditions their escape is determined and by whatever routes they reach the infected organs. Probably there is a disturbance of the symbiotic balance which prevails in the healthily functioning intestine between the bacilli of putrefaction which break up the proteins and the agencies of fermentation which act on the carbohydrates. Putrefaction affects mainly the sulphur-containing and aromatic groups of the protein molecule. It is controlled naturally in the healthy intestine

special affinity for the urinary tract. Thus, Patrick found that in the course of enteric fever—especially in the later stages of the disease—bacteriuria occurred which was often not due to the typhoid bacillus but to uncommon coliform organisms, termed paracolon bacilli. Bacteria, when once established in the urinary tract, tend to persist there indefinitely. Although urgent symptoms may subside the infection often persists, and is liable to exhibit fresh activity whenever the general resistance becomes lowered or favourable local conditions develop. Thus, for example, exacerbations are liable to occur in successive pregnancies. Microscopic examination in cases of chronic pyelitis has shown that the bacteria do not merely inhabit the surface, but are lodged in the depths of the tissues. Thus, it is evident that they are protected from any therapeutic agent which do not possess considerable penetrating power.

TREATMENT.

Emphasis has already been laid upon the fact that where obstruction exists in the urinary tract no therapeutic measure can replace the restoration of free outflow. In other cases additional methods of treatment must be considered, since, if left to themselves, the course of these infections is frequently protracted. The use of vaccines and of antiseptics requires examination. The important beneficial effect in bacillus coli infections of rendering the acid urine alkaline, established by Dr. John Thomson, appears to be universally acknowledged; this result is not due to the alkaline urine being *per se* a less suitable medium for the growth of the organism. It seems likely that the change in reaction of the urine causes the tissues to be bathed in a fluid which is more "bland," and thereby enables them to combat the infection more effectively.

Vaccines may be employed with the object of curing a chronic infection by raising the individual's immunity specifically towards the pathogenic agent. Especially in bacillus coli infections it is essential to recover the organism from the patient's urine, and to use it for the preparation of the vaccine; the importance of this lies in the fact that there is a great diversity in the strains of these bacilli, and each is highly specific in the sense of immunity reactions (see Mackie). The results obtained by the use of such vaccines



however, are ~~of no permanent~~ constant. Thus, clinicians are found who believe vaccines worthless, as well as those who place great reliance on them. It appears that they are of benefit in a proportion of cases. There is also good assurance that if judiciously administered there is practically no danger that the patient's condition will be aggravated by their use. Therefore in view of the fact that in certain cases striking improvement is reported to result from vaccines, their trial is justified. Possibly they act sometimes not in virtue of stimulating a specific immunity response, but as foreign protein which when introduced into the tissues, causes metabolic changes whose effects are not yet fully understood in detail. These changes may bring about improvement in infections; this form of treatment is sometimes termed "protein shock therapy." When administering vaccines with a view to immunisation it is advisable to begin with small doses of organisms, which are gradually increased; any marked reaction, such as pronounced fever, or aggravation of the symptoms not speedily followed by improvement, is to be taken as a sign that the dosage is too great, or has been too rapidly increased. On the other hand in protein shock therapy one aims at producing a fairly pronounced febrile reaction. Each procedure seems on occasion to be advantageous, but both the *rationale* and the effect of the treatment are attended by an obscurity which is highly unsatisfactory.

Antiseptics.—In considering the use of antiseptics it is necessary to remember the difference in accessibility of the bladder and the pelvis of the kidney. The bladder can be reached so readily through the urethra that the direct introduction of fluid into it is an obvious procedure. On the other hand, the only simple mode of reaching the upper urinary tract is by taking advantage of the kidney's capacity to excrete substances present in the bloodstream. Of the compounds hitherto examined only three seem to offer any prospect of efficient antiseptic action in the urinary tract, viz., formaline (administered in the form of hexamine), the flavines and the organic mercury compound, *e.g.*, mercurochrome—220 recently introduced by H. Hampton Young and his co-workers at the Brady Urological Institute of Johns Hopkins Hospital. In considering the applicability of a substance it is necessary to determine whether it is capable of acting under the

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conditions actually present. This involves questions of rate and intensity of antiseptic action, reaction of the medium in which the antiseptic must act, and its toxicity for the tissues of the host. Thus, substances such as mercuric chloride and carbolic acid are ruled out on account of toxicity, while, on the other hand, boric acid is so weak an antiseptic as to be valueless by itself in this respect.

Hexamine (the compound of formaldehyde with ammonia) in its undecomposed state is relatively non-poisonous and perfectly inert as regards antiseptic properties. In solutions with an acid reaction it decomposes with the liberation of formaldehyde; it is to the latter that the antiseptic action is due (Jordan, see also Thomson Walker). Thus, it is obvious that hexamine cannot have any antiseptic effect except where the reaction is acid. It has been shown that in the most acid urine naturally obtainable hexamine decomposes comparatively slowly, and after a moderate dose about two hours' duration of urine in the bladder is required for the formaldehyde to reach a concentration which will effect destruction of bacillus coli, a concentration of formaldehyde of 1 in 10,000 being required (Sholl and Deming). Thus the development of efficient antiseptic properties is not likely to be obtained above the level of the bladder, and even there the urine must be retained for a considerable period. In order to secure a sufficient concentration in the urine, it is found that 60 to 90 grains of hexamine should be administered daily. Like many other germicides, formaldehyde exerts its lethal action on bacteria fairly rapidly, and there is a critical concentration above which organisms are quickly killed and below which no inhibitory action results however long the duration of contact. Where there is polyuria or frequent micturition, and sufficient concentration and time of contact cannot be obtained, no result will be secured. A further disadvantage of hexamine is the not infrequent production of haematuria. (Clinical estimates of beneficial results following the use of hexamine in cases with alkaline urine would appear to depend on some other effect at present quite obscure.)

Acriflavine and proflavine are excreted mainly by the kidney. We found that after an intravenous injection of these substances

in the human subject an antiseptic urine was secreted, in which neither bacillus coli nor staphylococci would grow. The reaction of the urine is of great importance, since these dyes are much more active in alkaline than in acid urine. Within a range of reaction not greatly exceeding that which human urine may show, the antiseptic efficacy of acriflavine for bacillus coli is enhanced one hundred times on passing from the acid to the alkaline side (Browning, Gulbransen, and Kennaway). Davis and White, at the Brady Urological Institute, made similar observations independently. Dr. Leonard Findlay tested intravenous injections of proflavine in several cases of chronic bacillus coli pyelitis in children, but there was only a transient, though undoubted, effect, hence the trials were not pursued further. Davis has found that out of 400 substances examined, half of which were dyes, the flavines, apart from a mercurial dye compound, were the only ones which were excreted in the urine in sufficient concentration to render it antiseptic after intravenous administration in non-toxic doses. Further, Davis has shown that the flavines can be administered by mouth in the normal human subject in amounts which produce an antiseptic urine. Thus, a dose of 0.05 to 0.1 gram, given in a capsule to normal subjects, led to the urine being antiseptic as a rule for a period lasting from the fourth to the eighth hour afterwards. The reaction of the urine, of course, requires to be alkaline, especially in order to secure efficient antiseptic action on bacillus coli. In some individuals the dose of 0.1 gram produced catharsis, but in others amounts as great as 0.3 to 0.5 gram produced no such effect. Even the highest of those doses caused no evidence of irritation in the urinary tract or any other signs of toxic action beyond nausea sometimes. It is not suggested that the flavine compounds will cure infections of the urinary tract. But, so far, there is no record of clinical trials by the method of repeated administration by the mouth. These substances, however, are the only powerful antiseptics which may safely be administered by mouth or intravenously, and which act best in an alkaline urine. Also, in relation to the strength of their antiseptic power, they are relatively harmless for the tissues. Further, their antiseptic effect is inherent, and does not require chemical alteration for its development. Hence (apart from the compounds of mercurochrome type)

they are probably the only substances which can exercise antiseptic action at the level of the kidney. Therefore, at least as preventives of infection (*e.g.*, in cases where instruments must be introduced), they offer a prospect for effective application. As therapeutic agents it is unlikely that they can prove inferior to the drugs hitherto in common use. As regards employment for irrigation of the bladder, it must be noted that the flavines, like many other organic antiseptics, do not produce death of the organisms rapidly, hence it cannot be expected that the resulting short period of contact will sterilise the contents. But epithelium tends to take up the dye and then give it off gradually; hence a depot will tend to be formed, and the action will not entirely cease when the irrigation fluid is evacuated. Probably mercurochrome—220 is the most efficient drug for the irrigation of the bladder.

As regards the effects of injections into the pelvis of the kidney, O'Connor's experimental work is worthy of note. He carried out tests in dogs under conditions comparable with those existing in the therapeutic application of drugs in the human subject. The introduction of a 0.5 per cent solution of silver nitrate caused almost total necrosis of the epithelium of the pelvis and ureter with denudation of the surface, which was almost complete in four days, and was accompanied by round cell infiltration of the submucosa. Eight days after the injection regeneration of the epithelium was well advanced. It would appear that the benefits following treatment with nitrate of silver may be due largely to this caustic action. After injection of 1 per cent mercurochrome—220 there was practically no sign of damage to the epithelium, although penetration of the tissues, as shown by staining, was most extensive; hence mercurochrome seems to be the most hopeful local antiseptic for lavage of the pelvis, although no thorough tests with the flavines seem to have been made. Material injected into the ureter may be demonstrated in the collecting tabules (silver nitrate) and even in the glomerular spaces (mercurochrome—220); therefore, it is evident that great care must be exercised in treatment of this kind that the conditions are such that no excess of irritating compounds reaches the substance of the kidneys.—*The Glasgow Medical Journal*.

ORIGINAL ARTICLES.

WARMTH—A CURATIVE AGENT

BY

DR. S. D. GOSAVI.

"Now, that the trouble with him is over, let him be removed to the hills or the sea-side" is often the advice given by medical men to their patients during convalescence or in some chronic disease, during the period of disease. Change of climate in very many cases materially helps in overcoming protracted convalescence and curing many a disease. Most of these cures are undertaken in summer, when removal of a patient from one climate into another is facilitated by mild nature of climate though hot. Climatic cures are exclusively effected by removal into *milder temperature*. In general, the warmer part of the year, speaking of course of the temperate zone, is the time of recovery from most chronic illnesses. Only a few, such as the skin diseases, and certain conditions of the nervous system, bear the winter better than the summer. In fact, a general law can be given as regards the influence of the warmer season on the human organism; but in order to estimate this correctly, and above all, in order to apply it correctly to the particular case, we must, as in all things, here also take into consideration those physical and organic conditions, which counteract the partial influences of different temperatures. At the same time, the difference which exists between the requirements and the conditions of a healthy individual and those of a sick one must not be wholly forgotten.

Both common and clinical experience as well as physiological observations, respecting the influence of the warmer season of the year on healthy persons, go to point out that:

1. The metabolic changes are in general increased in cold and lessened in heat, and this because of the stimulation given to most of the different functions in the cold and its diminution in heat, a circumstance, which is undoubtedly expressed in the greater and lesser production of warmth.

variation in temperature. It is a responsibility, and must be discharged with great care and precision.

GONORRHOEA—A FRENCH METHOD OF TREATING THE DISEASE

BY

DR. S. D. GOSAVI.

It is a common knowledge that Gonorrhoea is caused by the entry of the Gonococcus into the urethral canal at a sexual connection with a woman infected by that organism. Within forty eight hours, the germ is able to settle down on some part of the urethra, start inflammation there, cause an ulcer, wherein it "manufactures the discharge," which flows forwards towards the external meatus, as well as backwards towards the bladder, and is likely to produce inflammation of the whole canal, of the bladder, of the inguinal glands, where the urethral lymphatics drain the infection of the testicles, giving rise to Chordee, Cystitis, Orchitis, etc., as sequels of the disease, and sometimes, though rarely, the infection is taken through the ureters to the kidney, causing Nephritis or an abscess somewhere in the urinary passages.

If these were the only limitations, the disease would not have offered resistance to the treatment, in the way, we meet in practice, the cure would not have been so difficult—I was going to say impossible. We come across cases of Gonorrhoea, which actually drive the physician to his wits end and exhaust the patience of patients who, after changing the treatment frequently, become desperately hopeless of cure and quietly accept the pessimistic satisfaction, that they are fated to suffer.

This satisfaction however does not prevent them from the sexual intercourse with their wives, if they are married, and the endless suffering caused to the poor innocent wives for no fault of theirs, is simply beyond imagination. A sort of vicious circle is established and the sufferings increase doubly. I will not attempt

however to go into these details as this article is not meant to describe the effect of this disease on the society.

That the effects of Gonococci are very difficult to be wiped off, that the Gonococci are very difficult to be rooted out from the place where they have settled down, is too poor an explanation and too poor a satisfaction in these days of Science. The "why" is always there to lead us to find out the real state of things.

In infecting the urethral canal, during the process of inflammation, the Gonococcus infects all the minute glands that surround the urethra along its entire length; the glands open in the urethra by a minute duct, and by their secretion lubricate the canal in normal health. When the infection reaches the interior of these glands, their secretion stops and after some time, the ducts are closed, locking the infection inside. It is this locked up infection which remains latent for a long period and to which attention is not paid when the local symptoms temporarily disappear—temporarily, because they are likely to return as long as the infection is there locked up in the glands surrounding the urethra.

This explains many a case of urethritis with discharge which we meet, in which the person gives history of having suffered from Gonorrhoea, from which he says, he was "cured", and emphatically refuses any sexual connection within a week or even a fortnight of the reappearance of the discharge, which is evidently the result of the "locked up" infection coming to the surface again and becoming active enough to restart the inflammatory process. The infection remains latent as long as it does not find any favourable ground to implant itself on, and this favourable ground is available by the "lowered vitality" of the local part either on account of the general weakness or produced, which is more probable, by taking alcohol, hot sprins etc., which irritate the urinary passages including urethra.

The infection is within easy reach of cure (by methods described below) so long as the prostate remains free from infection. The prostate is a gland much of the same type as the other ones; in fact, it is more or less a collection of minute glands, which open in the urethra by means of a common

duet. The infection easily reaches this gland in cases of posterior urethritis but takes some time to reach there in case of anterior urethritis. Besides, the compact structure of the gland does not allow easy access to the infection; but once it is infected, it is equally difficult to free it from infection for the same reason. In persistent cases of Gonorrhoea therefore, offering resistance to every sort of treatment, the safe and correct conclusion is that the prostate is infected.

In the course of the disease, the commonest condition, increasing the trouble manyfold, is strictures. They are certainly the result of the cicatricial contraction of that part of the urethra, where the ulcer has healed up. Rapid or slow dilatation by means of steel sounds gives temporary relief to the patient, but the stricture has the tendency to contract again after some time, requiring repeated dilations at frequent intervals for a very long time and in some cases till the end of life. The necessity of repeatedly dilating the stricture arises on account of the fact that the glands, surrounding that part of the urethra, where the ulcer has healed and stricture is produced, are destroyed and the normal lubricant capable of preventing the contracting tendency even of the fibrous cicatrix, is lost.

According to this view, outlined above, it is clear that the infection of the glands, surrounding the urethra and the prostate is the chief cause of the disease being chronic and difficult to be rooted out. If we can possibly touch these glands by way of treatment, there is likelihood of the disease being cured.

Dr. M. Berard, Specialist in and a great authority on Venereal Diseases has got his own method of treatment for Gonorrhoea. He first of all methodically examines his patient, takes down notes in his book, draws the discharge by probing the urethra from the root of the penis, takes a drop of pus on a slide for microscopic examination and examines the urine, if a sample is taken to him. Then he asks the patient to lie on a table, fills his bladder with 8 to 12 ounces of aseptic solution of methylene blue. Then he introduces a silver staff (straight) 4" long in the urethra and rubs the penis along the urethra with very little pressure. In doing this, he says, he massages the periurethral glands and squeezes out of them their contents, partly mechanically and partly by

tickling the glands to contract from their closed ends. This massage is a little painful and is continued until the patient can bear the pain no longer. The bladder immediately contracts reflexly and the antiseptic fluid washes out all the flakes that come out of the glands.

After 5 minutes' rest, Berard passes a thin bugie with a thick conical end and tries to explore the stricture, if there is any, and dilates them by a suitable sound. He then again fills the bladder with either Condyl's fluid or aseptic methylene blue solution, flexes the patient's thighs or his abdomen, and with the index finger introduced in the rectum rubs the prostate, until the pain is again unbearable, and the defaecating sensation—produced reflexly—becomes very severe. The bladder contracts, the fluid once more flows through along the urethra bringing out more flakes from the prostate. The flakes are examined under microscope separately.

M. Berard claims that the massage of peri-urethral glands and the prostate after filling the bladder with clear lotion fails to bring out any "flakes", if these glands are normal and uninfected, and the persence of these "flakes" is very conclusive in diagnosing the case in the absence of urethral discharge.

He advises his patients to carry out this massage and wash. ing every day, and as days pass on and the glands cleared off, the patients feel the pain less. He is treating cases of Gonorrhoea, in this way and with success. It is worth while trying it in India, and any interested practitioner can profitably fit up his concern with the necessary fittings (which are but few) to follow the above lines. The patients may in the beginning be frightened on account of pain, caused to them in the process; but if one is able to inspire confidence in one's patients, regarding a particular line of treatment, it is sure to outweigh the desire to achieve "painless cure."

It would not be out of the way to mention here, that hip-baths with hypogastric massage is often times credited with the cure of diseases of the prostate, of bladder, and of urethra. Retention of urine is relieved by hip-bath. In fact, baths are employed as an empirical remedy to cure the "ills below the waist", and among these ills, Gonorrhoea. On closer observation,

and efficiency and the fact that they have been called temporary has made little difference in the nature or tenure of their service, and it will be exceedingly hard on them to alter the conditions of their service, merely because they have been awaiting confirmation in several cases for a prolonged period.

5. The aforesaid letter of the Government of India also lays down that "the only exceptions will be those persons who are already public students in Medical Schools and have as such signed a bond to become Sub-Assistant Surgeons on completion of their courses of instruction." "It is clear," observe the Government of India, "that they may not equitably be required to enter into a bond, *on becoming a Sub-Assistant Surgeon*, in terms differing from those now in force." The portions italicised, it is respectfully submitted, show that those who were "public students in Medical Schools" when the new provision was introduced, are to be exempted from being required to give a bond in the revised form, because in the view of the Government of India, it would be "inequitable" to require them to give such a bond on becoming a Sub-Assistant Surgeon. The time of their appointment is not material; *whenever* they are appointed to the service they are intended to be exempted.

6. It is further most respectfully submitted that if in the view of the Government of India, it is "inequitable" to require such students, on becoming a Sub-Assistant Surgeon, to furnish a bond in the revised form, it can scarcely be equitable to require it from them if they are *now* working as temporary Sub-Assistant Surgeons, and still less from their predecessors in the Medical School who passed out *earlier* and have been serving as temporary Sub-Assistant Surgeons *longer*.

7. Under all the circumstances detailed above, I most respectfully submit that

- (i) the orders contained in the endorsement of the Inspector General, Civil Hospitals, the Punjab, that "the Sub-Assistant Surgeons selected for confirmation will be required to sign the revised form of bond before they are confirmed" and

- (ii) the orders of the Punjab Government (Ministry of Education) contained in letter No. 28464, dated the 15th November 1921 from the Secretary to Government, the Punjab, Transferred Departments

could not have been intended to include the classes referred to above as expressly exempted in the Government of India letter aforesaid viz :—

- (i) all Civil Sub-Assistant Surgeons whether temporary or otherwise, whether confirmed or awaiting confirmation who were appointed to the service prior to the enforcement of the revised form of bond prescribed in the aforesaid Government of India letter dated the 31st August 1920, and

- (ii) Those who, at the date of issue of the aforesaid Government of India letter, were "already public students in Medical Schools and had as such signed a bond to become Sub-Assistant Surgeons on completion of their courses of instructions."

8. I humbly beg, therefore, that as coming within the terms of the exemptions contained in the Government of India letter aforesaid, I may not be required to sign the revised form of the bond.

C. P. AND BERAR S. A. S. IN CONFERENCE.

TEXT OF RESOLUTIONS.

The following resolutions were passed at the first Provincial Conference of the C. P. branch of All India Sub-Assistant Surgeons Association, held at Nagpur on the 20th, 21st and the 22nd November 1921.

This conference urges the Government.—

1. That the pay of the Sub-Assistant Surgeons of this Province should begin with Rs. 100 per mensem and be raised by annual increment of Rs. 10 to Rs. 350 with the usual efficiency bars and only one senior grade which should be at least 15 percent of the total strength.

2. The allowances should be brought in conformity with those, sanctioned in the Madras Presidency recently which are as follows.—

Nature of duty.	Allowance recently sanctioned.
Teaching*	Rs. 30-50
Laboratories	" 30
Lunatic Asylums	" 50
Jails	" 30
Itenerating dispensaries and cholera duty	" 50

The dispensary allowance should be enhanced to Rs. 20. The central jail allowance should be equal to the grade pay of the Sub-Assistant Surgeon. The allowance for the Police Hospital should be Rs. 30. There should be also a school inspection allowance of Rs. 15 per month.

3. The allowance paid to Sub-Assistant Surgeons on sanitary duties should be raised to at least Rs. 2 per day as the present rate of Rs. 1/8 was sanctioned at a time when the cost of living was considerably cheap. This allowance in case of Assistant Surgeons has been increased to Rs. 3 from Rs. 2 of the former days.

4. There should be an allowance of Rs. 8 for each post-mortem performed.

5. The present course of 4 years should be extended to 5 years in the Medical Schools. Biology should be included in the curriculum and the various departments should be augmented for better practical studies.

6. Provision should be made for students with brilliant career in the schools and the suitable members of the service for admission in Medical Colleges with suitable concessions with a

view to afford them scope for professional development and for bettering their prospects, both material as well as professional.

7. The recent proposal of the Government for substituting a post graduate course in the place of the present grade examination should be brought into force immediately. This post graduate course should be given in a Medical College and not in a Medical School.

8. The present bond system should be abolished altogether as it reduces the service man to the position of an indentured labourer and is derogatory to the self-respect of the individual and to the reputation of the State.

9. (a) This Conference welcomes the suggestion of the Hon'ble the Minister that efforts should be made now to make the medical profession in this country independent and self supporting and this Conference recognizes the efforts Government have made so far to give a lead to the medical profession and is now of opinion that time has come for the medical profession to take up medical relief on their own initiative and maintain it on their own exertion.

(b) That in the opinion of this Conference the Government should in the first instance for some time help private practitioners who have got no capital to start private business with buildings, furnitures, medicines and instruments on suitable terms.

10. The present house rent in lieu of free quarters is quite inadequate. It should be raised to Rs. 20 at least in places like Nagpur, Jubbulpur, Raipur, Amraoti and Akola and Rs. 15 in other places.

The following resolutions were passed at the Provincial Conference of the C. P. Branch of the All India Sub-Assistant Surgeons Association, for being sent to the Government as recommendations of the Conference.

1. (a) The quarters built in accordance with the new standard plan are very low and require a raising of the roof. It

is impossible to dwell in them in the summer as they become very hot on account of the roof being single tiled. The quarters should be provided with ceiling and one room more should be added to them.

(b) The windows should be protected with iron bars as the quarters are quite unsafe without them. They should also be provided with sun-sheds.

(c) The verandah of the quarters is 6 feet wide. It should be made 8 feet wide.

(d) The quarters should be provided with cow sheds and servant quarters. The latrines are without doors and this should be provided for.

2. The decision of the local Government against promotion of Sub-Assistant Surgeons to Assistant Surgeonships takes away the only hope, a man of merit and service has. This Conference therefore recommends to the Government to re-consider their hasty decision and at once give effect to the resolution of the Government of India as this Conference considers several members of this service suitable for such promotion.

3. The decision of the Jail Committee as regards the position of Sub-Assistant Surgeons in jail is very unfair. The Sub-Assistant Surgeons should only be subordinate to the Superintendent and to none else.

4. The present system of postings and transfers of Sub-Assistant Surgeons is arbitrary. The dispensaries and the various other posts open to them should be classified and be accorded on the principles of seniority and merit.

5. Tenure for jail, police, sanitary services and postings in unhealthy places should not exceed one year in the case of an individual.

6. This Conference notes with regret the fact that the inadequate revision of pay which was given effect to from 1st December 1919 has been wrongly calculated. Instead of calculating the increment from the date of service it has been arbitrarily settled so that the majority of the class who entered service before 1-12-19 are practically losing in this calculation a considerable period of their service for increment. This Conference

therefore recommends that this calculation be done from the beginning of service to remove the discontent prevailing amongst persons affected.

All postings and transfers of the Sub-Assistant Surgeons should be notified in the second part of the C. P. Gazette and their names should be included in the Civil list.

8. This Conference is of opinion that there being no maternity ward attached to the Mayo Hospital the training in midwifery remains defective. Steps should be therefore immediately taken to provide the hospital with maternity ward.

9. Charge of main hospitals and branch dispensaries now reserved for Assistant Surgeons should be kept open for Sub-Assistant Surgeons also as was being done before.

10. The Sub-Assistant Surgeons should be given the privilege of attending Durbars.

11. Sub-Assistant Surgeons in charge of dispensaries should be relieved of the duty of selling tickets.

12. Provision of adequate pension to the survivors of those Sub-Assistant Surgeons who die while on epidemic duties should be made.

* * * * *

The following resolutions were passed by the students of the Robertson Medical School for being included in the list of resolutions passed at the provincial conference of the Sub-Assistant Surgeons.

1. The appointment of the lecturer in Midwifery should be held by a specialist in that subject. A lady doctor should be given preference.

2. The lecturers appointed should be specialists in the subject they are appointed for. Such appointments should be made from amongst the capable private practitioners also.

3. A student failing at the C. P. Medical Board examinations for more than three times should not be debarred from appearing any more. A student after one failure should be allowed to appear at the examination privately as is done in the University examinations.

4. The students of the Robertson Medical School strongly support the resolutions passed at the provincial conference of C. P. Sub-Assistant Surgeons Association particularly those of extending the present course to one of 5 years, of abolishing the bond system and of providing a maternity ward to the hospital immediately.

THE ALL-INDIA CONFERENCE.

WELCOME ADDRESS.

Mr. T.R. Damodaram in welcoming the delegates to the 16th session of the All-India Sub-Assistant Surgeons' Conference said :—

DR. MYLVAGANAM, BROTHER DELEGATES, LADIES & GENTLEMEN,

As a loyal subject, and faithful servant of His Highness Sri Krishnarajendra Wodeyar, the Maharaja of Mysore, and on behalf of the Reception Committee, I accord you my whole-hearted welcome to Bangalore or the "City of Beans" as it is called. The name Bangalore is a corruption of *Bangaluru* which derived its name from Bengaluru, a kind of beans. A story is related in connection with it. A king by name Vira Bellala in the course of hunting excursions, lost his way and was overtaken by night fall. In a fix he was running-hither and thither for shelter. At last, foot-sore, faint and weary, a lonely hut was in sight of him and he came upon it, very like a shipwrecked soul finds a floating rafter. An old woman was the solitary in-mate of this lonely hut. The benighted traveller applied to her for something to eat. She had nothing better to give him than some Bengaluru, green-beans, boiled in a little water, which, however, he was glad to eat. The incident speedily became known and the village (Uru) which sprung up then took the name Bengaluru.

The city stands in the centre of the Mysore tableland about 3,000 feet above the sea level. It contains a population of over two lakhs. It consists of two-parts, the city proper and the Cantonment. Its climate is noted for its salubrity, and is well suited to the constitutions of both Europeans and Indians. It knows neither burning cremation of summer, nor the cold burial of winter. Its mean temperature is 76.2. It is the central mart of the Mysore Province, and is the official Head Quarters of the Mysore Administration, and a large Military Station. The Indian Institute of Science, the Lal Bagh, and the public office-buildings, the Maharaja's Palace are all worth-visiting. The reason for

choosing this place for the XVIth Conference is that it was here that the Founder of our Association the late Mr. Ramachandra Iyer, moved, breathed and had his being, and it was here that the Association had first undergone its embryonic stage.

To you, delegates and members, who have come from distant lands at great personal inconvenience our grateful thanks are tendered.

GENTLEMEN, at last the day is come; and come it has for the posthumous realisation of those dreams and desires long harboured and cherished by the friend, father and founder of the Association, the late Mr. P. S. Ramachandra Iyer. Long had he struggled in his days to get up an All-India Conference in his own place, and on the very soil where he had sown the seed, the seed that has been sprouted, reared itself to a height, and grown itself to a huge tree, spreading its flowers and foliage, throwing its twigs and branches throughout the vast length and breadth of India and Burma, *viz.*, from Lahore to Cape Comorin, from Rangoon to Bombay.

It would be worth your while paying your visit to a tiny chamber not far from this very spot, wherein its faithful followers had gathered and banded themselves into a Society called the "Hospital Assistants' Society." Their number was not more than five, and these were Mr. Ramachandra Iyer, the founder, Mr. Ramaiya, Mr. Srinivasa Murthi, Mr. Grant, and Mr. Joe Basappa Setty. In this cosy chamber they retired in the cool hours of the evening to exchange their professional views. Essays were read; lively discussions arose. "Observations on the healing of wounds," "How to answer professional questions in the courts," "Description of abdominal operation in all its details," were a few of the numerous essays that were read on and off. For a time this combination of our pilgrim fathers who had started voyaging in quest of means for the elevation of their depressed brethren worked well. But alas! there came a crash. A gale then blew upsetting the whole thing. The unexpected always happens. Jealousy in all its hideous forms crept it. Suspicions stole in glowing like embers; ill-feelings estranged one from the other, and the infant Association had to die of inanition, in consequence.

GENTLEMEN, it is not for the cook to relish his own dish; it is not for the physician to heal his own illness; it is not for the world Conqueror to control his own children, though the whole world may lie subdued at his own feet. So is it with the Prophet or the Founder. With his own kith and kin he finds no favour; his own acts enjoy not the appreciation of his own country. Familiarity renders even the sweetest ambrosia insipid. Nearness distorts the best of vision. In the words of Tennyson "Dowered with the hate of hate and scorn of scorn" the Prophet or the Founder leaves his own home to meet the "Love of love" that awaits him abroad. Such was the fate that the late Mr. P.S. Ramachandra Iyer met at the hands of his own folk; such was the cold break that damped his enthusiasm; such was the rise, such was the fall of his Association at the outset; such were his infructuous initial attempts; such was the process of distillation that the Association had undergone at the "City of Beans" over the flame and fire of jealousy and suspicion, before it had evaporated off to the "City of Wealth" or Bombay, and there to get cooled and condensed down to a solid and shining crystal.

And now, Gentlemen, my sacred duty is to fervently pray for the longevity and welfare of this our precious Association; for the success of its noblest causes; for its ever green prosperity and the solid strength of all its constituents. Whatever judgment the aristocracy may pronounce on it, whatever the air of superiority may say and talk of it, to a Sub Assistant Surgeon it is his own! Goes an old proverb in Tamil to say that

The hatching blackest raven

Her blackest chick she holds as Golden.

The Association has at heart the interest and welfare not of tens or hundreds nor of thousands but of tens of thousands of Sub-Assistant Surgeons; it has enabled a Sub-Assistant Surgeon to assert himself. It has elevated him far above the point at which he had stood at the outset. It has changed his designation and has bettered his prospects though a great deal remains yet to be done. Its end and aim has been to promote scientific knowledge more to help the better understanding of the relationship, and to maintain the honour and promote the interest of the class; to

increase the moral, material, social and intellectual progress. The organ of the Association—the Indian Medical Journal—under the able Editorship of Mr. Venkappa shows what amount of work the members of the class have been doing. There have been several original contributions from the pen of the members of the class, which have attracted the attention of other and higher men. Such is the brief history of the Association I have endeavoured to sketch.

Now about the Sub-Assistant Surgeons in Mysore. The medical administration here consists of the Surgeon, Assistant Surgeon, and the Sub-Assistant Surgeon. The Sub-Assistant Surgeon forms the bulk and mainstay of the department. In pre-rendition days and before he had been drafted from the Military section of the British Medical Service. Almost all the dispensaries are manned by him. In fact he treats larger number of patients than anybody else. He is a man not for the millionaires in the metropolis but for the humble millions in the mofussils. He is a man not for those precious souls in the marble palaces, who drink from amber and use gold spoon and fork, but for those humbler folks who dwell in huts drink from earthen pots and use natural spoon and fork.

In those far away days when no steam hissed away the distances; when no "De Magneto" set the air inflated wheel in a dashing whirl, when no messages shot through poles and wires, it is the "dresser" or the quondam Hospital Assistant that dredged his lonely way from mile to mile in the jolting ox-cart to popularise the Western system of medicine. But a stroke of the pen from the ponderous head office table had gone, and he had been tackled away to those far off "horrible places" of Selkirk where Python slumbered in the open and venomous reptiles crept, crouched and coiled.

Both the speculator and the capitalist had emptied their jingling purse, and the fields then started looking gay with the fruitful verdant plantation. Mother Earth oped herself before the drilling augur of the purse-proud minor in quest of the strata of gold. Multitudes then migrated for subsistence to these erstwhile deserted parts. The task or lot then fell on the then "Dresser" the or

us to give a detailed account of the operations done by the Sub-Assistant Surgeons at the Wardha Mission Hospital. These are a few of them:—

Cataract

By Paul's method,

By capsulotomy,

Iridectomy for prolapse of the iris

Trephining for glaucoma

Iridectomy for closed pupils

Congenital cataract needled

Entropion operation by Smith's method

Removal of Eye-ball

Supra pubic prostatectomy

Removal of stone from the bladder

Laporotomy for obstruction of bowels Paul's tube inserted

Laporotomy for intestinal obstruction

Tonsillotomy

Perineal section for drainage of the bladder

Gastro-enterostomy posterior

Supra-pubic lithotomy

Radical cure for inguinal hernia

Excision of lower jaw

Tracheotomy for F. B.

Enucleation of the sack for hydrocele

Perineal cystotomy

Wheelhouse's operation for stricture

Removal of abdominal tumours

Instances of Sub-Assistant Surgeons purchasing their eternal freedom from the shackles of the subordination and getting through the ordeal of academical courses in foreign lands proves the comprehensiveness of his mental faculties.

Many a good practical work turned out by the Sub-Assistant Surgeons in the special institutions, *e.g.*, Tuberculosis Hospital, Pasteur Institute, Laboratories, Eye Infirmaries, X-ray Institutes, shows the priority of practice and precedence of experience before anything else.

We have heard of a Professor in Anatomy who had devoted his whole time for Anatomy and had sacrificed his all at the altar of Anatomy and Anatomy alone. Such a proficiency is said to have shrunk from opening a tonsillar abscess. We have also heard of a surgery attendant attached to an operation room for thirty five years venturing to perform herneatomy.

Between this proficiency on the one hand and the deficiency on the other, place a Sub-Assistant Surgeon. What not can be turned out of him? In spite of his four years' arduous course is he yet to be classed among the riff-raff or thrown aside as a caste off clothing for the laundry's wash? His curriculum has increased tenfold. He has to secure a pass in almost all the subjects that a higher functionary has to do. He is not wanting in powers of expression unlike his progenitor. A good many of his colleagues are Rao Sahebs and Rao Bahadurs. One or two of them are Honourable Members of the Legislative Councils. And yet the fore-finger traces him in tarry colours as the *Sub-Assistant Surgeon after All!*

His usefulness.—The myriads of dispensaries in the up-countries stand as a monument of his usefulness to the suffering masses. Cooped up in the cosy country shine of cure the Sub-Assistant Surgeon ministers to the medical wants not of the affluent souls rolling in wealth but of those humbler folks who fasten their poor savings in their loin; not of the Lord of pleasure slumbering on the voluptuous cushions, but of those fellows who toil on the soil, who draw their own water, who hew their own wood. Thus goes the notable opinion of a member of experience. Says Lieut. Colonel Bryson.

"A Sub-Assistant Surgeon corresponds in terms of currency to the nickel anna the coin that serves the multitude. As is the whole greater than the part so is the mofussil greater than the city, and if we would talk about the death rate of mortality in

It happened once upon a time that a Sub-Assistant Surgeon was called in to see a case of transverse presentation. The door of the cosy cottage, laid flat on a number of kerosine tins served as a table. The huge earthen pot boiling the instruments and gauze strips was a steriliser. After the clean decapitation of the dead fetus the remuneration uncalled for goes not beyond six annas. Questioned as to the propriety of conduct the party grows boisterous in language and logic howling "Are you not a Doctor of small pay? Does your name find its place in the Gazette? Deserve you more? Desire you more?"

In these days when the rupee is worth only five annas, five and forty is too meagre a start for the initiate to meet the cost of his decent dress. His five and fifty is a sorry finance for the up-keep of the home and family. His five and sixty is too poor an income to serve as a lay-bye for the old age.

On behalf of my poor brethren I take upon mine own shoulders the responsibility of appealing openly on this very platform to the good-will of our beloved Sovereign, His Highness Sri Krishna Rajendra Wodeyar Bahadur, to his sympathy and mercy and his solicitude for the oppressed and depressed classes. May His Highness be graciously pleased to bestow his mortherier attention on these poor souls who are for the suffering millions of His Highness' subjects and masses.

We expect His Royal Highness' progressive State to set an example. Is it too much for us to claim half the pay of the Assistant Surgeons' cadre? Is it too much to claim a sort of Rs. 100, rising to Rs. 350?

Some suggestions.—The worry of correspondence and the maintenance of registers seem to engage more of his attention than can be devoted to the professional work in the L.F. Dispensaries. His diploma testifies him to have been qualified in medicine, surgery and midwifery. Maintaining the stock book of medicine seems to be the bulk of work in medicine. The dredgery of the post-mortem and the dredgery of trying to please everybody and anybody in the taluqs for fear of anonymous petitions takes the place of his work in surgery. Here and there not everywhere the occasional petty quarrels with some incorrigible garrulous mid-wives is all the

work in mid-wifery. The cause of all this lies in his status—his mastero-menial status. With a hand patting him on his back, with encouragement and a heart pulsating with sympathy for him, a tiny laboratory, a tiny operation room, equipped with good set of surgical instruments, a trained English-knowing compounder trained in the art of chloroforming and aseptic surgery, a sick nurse, with these a Sub-Assistant Surgeon can be expected to do more solid work in the taluq than can be otherwise. His post collegiate course in the big hospitals is not as it ought to be. Perhaps this is the only medical school in all India where the Sub-Assistant Surgeon is rigidly excluded from the sanctum of demonstratorship or assistant demonstratorship as a lowly qualified fellow or perhaps as a Sudra. We can only beg and beseech the authorities to afford him opportunities for major operations as is done in the Mission Hospitals. With such experience much can be expected of him in the L.F. Dispensaries that will give him greater self-confidence, and there will be no necessity for the patient writhing in the grip of the strangulated hernia going all the way from the remotest corners to the big provincial hospitals a hundred of miles away.

To you, Sir, our worthy Chairman to night, Dr. Mylvaganam, we look forward for redress. Your world-wide experience beyond the walls of India must have shown you instances of average intelligences doing more than ordinary share of work under proper encouragement. You must have seen in the course of foreign travels what extraordinary work is turned out by the workman in democratic American factories, workmen who have never been at school who knows not the three R's, who are as ignorant of books as anything. The Sub-Assistant Surgeon may not be a fellow of a University but as a fellow of adversity much can be expected of him. The present prime minister of England and his co-adjutors are not University men and yet marvellous are their capacity. To you Sir, Dr. Mylvaganam, we appeal to your sense of sympathy and mercy; elevate us; encourage us; posterity will ever remember you in their prayer hours.

May God Bless You.

May You Live Long.

heard sometime ago about a distinguished statesman, who visited a certain well equipped Hospital, to illustrate the mentality of some people. After having been shown round the various wards and the number of sick-patients undergoing treatment, he turned round and asked "what return does this Hospital give on its outlay." The work of the Medical Department cannot be measured in silver or gold. If each one of us can be helpful to relieve the sufferings of a single fellow creature in a day, I boldly say we justify our existence. As I have often expressed conserving the health of any community and saving them from premature decay and decimation are more important than any other reproductive work. It is not capable of adding to the revenue of any country but its worth must be assessed by the number of lives saved and the relief afforded to the community. For some reason or other, the medical men in public service in Eastern countries, barring the convented service, receive a pay inadequate to their qualification and ability. This cry of inadequate pay is not peculiar to you alone, but it is a common cry among the graduates of the Universities as well. They too after a strenuous course of 5 years, after passing the Intermediate or the Final Degree in Arts and having passed an examination, which requires a higher percentage of marks for a pass, are started on a very low salary, when compared to other departments. Several reasons have been adduced to explain this anomaly. It is often said that medical men have the benefit of private practice, which brings them an extra income to supplement their pay. It is also said that the supply of medical men being greater than the needs of the country, they are willing to accept service on any pay offered to them. There is certainly some truth in these statements and from my own experience, I find that there are many who are willing to accept what we are pleased to offer them. But to those already in service and who have the responsibilities of family ties and the education of their children, the remuneration now paid is far too inadequate to maintain their self-respect and to keep their body and soul together under the present altered conditions of our environment. I understand that several provincial Governments have sympathetically

cally listened to your representations and have raised your initial and the maximum salary. It is a matter for congratulation and I rejoice to think that your appeals have not fallen on deaf ears.

5. You will naturally want to know what has been done in Mysore for the body of Sub-Assistant Surgeons, who are doing pioneer work in the remotest corners of this State. I may assure you that their case has been represented to Government both by my predecessors and myself and the Government of His Highness the Maharaja of Mysore have sympathetically listened to our representations and fully realise the present situation but are unable to render adequate relief immediately except the increase of Rs. 5 all round, recently sanctioned, in lieu of high price allowance, owing to the financial stringency rendered by the recent war, much as they would like to adopt the Madras scale.

6. It must also be remembered that this State cannot be compared with the neighbouring large provinces with much larger revenues than our State. A large percentage of the Sub-Assistant Surgeons of the Mysore Medical Service have been state-aided and a sense of patriotism must prevail at this moment and they should not force the hands of Government at this critical juncture. The relief cannot long be delayed. In your address you have referred to a desire to have your initial pay increased to Rs. 100 rising to Rs. 350. So far as Mysore is concerned, such a leap will not be possible before the pay of the graduates is raised to something higher than what it is to-day. As you know they are started on Rs. 80 and it will not be feasible under the circumstances to recommend you to a grade of Rs. 100 rising to Rs. 350. The whole service will have to be reorganized before we can think of such a step.

7. Coming to the second question, which seems very vital to your emancipation from the limited and circumscribed sphere of activities open to you at present under the existing condition, I fully realise your difficulties. Under the existing system of teaching in the Medical Schools, specially set apart for the training of Sub-Assistant Surgeons, as you have rightly pointed out, a Sub-Assistant Surgeon remains always a Sub-Assistant Surgeon, however he

may prove himself efficient and capable. In no other country in the world that I know of, are there three distinct water-tight compartments in the Medical Service, as is obtained in India. In Ceylon, there is only one service and all the officers are eligible for the higher appointments according to their merits. Even the smallest insignificant town or village possesses an L. M. S. of the Ceylon Medical College but for higher promotions, he needs higher British Medical qualifications, for which he is not debarred by any educational disabilities. The L. M. S. of Ceylon is recognised by the General Medical Council of Great Britain and the preliminary educational qualification is by no means so high as in India. But with regard to Universities, you are aware that each University has the privilege of prescribing its own minimum standard for admission into any of its faculties and we are not entitled to question their arbitrary standard. Each University wishes to keep its standard high and select and different values are given to the degrees obtained in different Universities. As an instance, I may draw your attention to the value held in public estimation of a degree given by the London University and the University of Brussels. It seems therefore necessary under the existing conditions that such distinctions should exist for the advancement of higher studies.

8. In my opinion, whatever necessities there may have been in the past for creating a subordinate service in India to meet the exigencies of the time, the same arguments can no longer hold good under the present conditions. From my experience of our local Medical School and of the Sub-Assistant Surgeons recruited into our service from the Medical Schools in the neighbouring provinces, I am fully convinced that the 4 years' curriculum is quite inadequate to impart a sufficient scientific and clinical knowledge in all the different branches of Medicine, Surgery, Midwifery, Gynaecology, Diseases of Children, Eyes, Ear, Throat and Nose, Tropical Medicine and Bacteriology. No one can say that any one of these subjects is less important as to be omitted from our present day's medical curriculum. These sciences are rapidly advancing in all directions and if Western Medicine has to extend its usefulness for the benefit of the suffering humanity, irrespective of class, creed or colour, either in the largest cities or in the remo-

test corners of this great Empire, it is necessary that the men entrusted with this arduous and noble work should be mentally equipped to carry out this great mission with honour and credit to themselves and benefit to the suffering fellow creatures. The professional work in the mofussil towns is no less important than in the chief cities. More urgent cases of diverse nature are brought to the men at the spot and unless he is competent to render timely relief then and there, valuable lives will be lost.

9. In my recent tour, I have noted obstetric operations of life-saving nature performed successfully by the Sub-Assistant Surgeons besides many other operations. It is in the far distant parts that we require efficient men, as they are the sole medical advisers to the people. In the chief cities one has the choice of so many medical men at his disposal to pick and choose from. Given a good man even in an insignificant village, you will soon find him fully occupied doing genuine good work among the people. So far as human lives are concerned, no half measures or short cuts appear to me safe. No financial consideration should stand in the way of affording genuine medical relief to the voiceless millions. The establishment of Ayurvedic and Unani Dispensaries to afford medical relief to the masses can serve no better purpose than an "Eyewash". Their methods of diagnosis are yet primitive. Their ancient science has remained stagnant all these years without any progress, while, Western medicine has been enriched with grand discoveries and has advanced with remarkable swiftness. I do admit that there had been some useful specific drugs for some known diseases but they had been lost to the world for ever on account of the extreme conservatism of the physicians, who practised them ages ago. Even now you cannot except a man to give out his recipe for a particular disease, for the fear that he will lose his means of living. When such distrust and conservatism exist, there can be no salvation for the indigenous system of medicine. I would urge that all the well-reputed physicians do join and publish an Indian *Materia-Medica* which would be helpful to the public. As I said before, if genuine medical relief has to reach the masses, it must be through the Western medicine alone. Therefore, the time has

come when we should reconsider the situation in the light of the rapid advances of our science and so adjust our medical education to suit the needs of the time. Many of the Medical Schools in India will need better equipment and a better class of lecturers than what are supplied at present. In some Medical Schools, I have known one Assistant Surgeon to take 2 or 3 different subjects at a time. These Schools are not provided with any Laboratory at all, to teach Chemistry, Physics, Bacteriology, Pathology, Biology, &c. A more theoretical course of lectures is delivered and the students are expected to master the subjects they are taught without practical demonstration. It amounts to teaching Geography without the aid of a map. If as you have pointed out, the Matriculation or the S. S. L. C. Examination meets all the requirements of the British Medical Council, I, for my part, can see no technical difficulty in the way of your getting your Diploma recognised by that Council, provided that your curriculum is increased to five years and that your lecturers are a better type of men than what they are at present in some of the Schools and that you are taught all the subjects required by the Medical Council. But from my experience of the students recruited from the S. S. L. C. class of Mysore and Madras for the Mysore Medical School, I must candidly say that the standard is rather low for a medical diploma. Perhaps the Matriculation examination of previous years will be better suited. After the successful completion of your studies at the end of our 5 years course, you will be entitled to the Diploma of "Licentiate in Medicine and Surgery." This would entitle you to proceed to England if you so choose and to obtain further diplomas there before competing for the I. M. S. or any other service you may select. Those who select to remain at home may seek employment under Government at a better rate of pay or go in for private practice. In any case, there need be no bar to your entering higher service on grounds of insufficient preliminary education or inadequate professional training. I wish to suggest that if all the Medical Schools in India cannot be brought to a high standard of efficiency at once, at least, a few may be fitted

up at a less cost and the experiment tried with the full approval of the Medical Council. A diploma of L. M. S. like that of Ceylon should answer your purpose. I am fully aware that the path that leads to the ultimate goal will not be strewn with roses. You will yet have to meet many difficulties and disappointments before you reach the ultimate goal, because, vested interest and financial consideration will come in conflict with your movements, but if you continue in the same constitutional lines undesperingly, as you have done hitherto, and with the support of the growing public opinion in your favour, the day will not be far off when you would attain your much desired reforms. The change may not perhaps be of benefit to several of the older members of your Association but the future generation will bless you at all times.

10. I think this is an opportune moment to expose some fallacies connected with the recent resolution of the British Medical Council regarding the so-called faulty training in practical Midwifery in Indian Universities which you have referred to in your address. I regret I have not seen the proceedings of the Council to understand the real situation but from the violent protests made from several parts of India and from the resolutions in the Imperial Legislative Council, I fear that there has been grounds for alarm. If I remember rightly each student appearing for the final conjoint examination of the Royal College of Surgeons of England, to take an instance, is expected to have conducted at least 12 or 20 labour cases before presenting himself for the examination in Midwifery. In my time, the students of the London Medical Colleges had no Maternity Hospitals attached to their Colleges to receive training in practical Midwifery as in German and Austrian Universities. Under some arrangements with the various local bodies, each hospital had a staff of Nurses and Doctors specially set apart to attend to labor cases among the poor people about the vicinity of each hospital. As the calls came, each student was expected to take up the cases in rotation with the aid of the Doctors or Nurses amidst the unwholesome surroundings of a poor London Workman's house. The difficulties and incon-

veniences experienced by the students at all times of the day and night, either in winter or summer, were immeasurable. In some instances, even their pockets were picked at night by the London hooligans. In my case, I was exempted from the ordeal as I had already conducted about 25 cases in Ceylon. Such were the facilities afforded for practical Midwifery in London. The special Maternity hospitals were not open to ordinary students. But the facilities afforded by the Indian Maternity Hospitals, where students could not only conduct as many labour cases as possible under congenial surroundings and under the direct guidance of the specialists, but could watch also all other major obstetric operations performed there, must be convincing proof that the British Medical Council has been wrong in their present unreasonable attitude. If the practical training in Midwifery in India has not been faulty all these years and if the graduates have been allowed to appear for higher degrees without an extra course in practical Midwifery, it is very difficult to reconcile how this deficiency has been recently detected all at once, when we have in our midst far better equipped institutions than before and have better men to teach. The responsibility must therefore lay at the feet of the Professors, who are entrusted with the teaching of this particular subject in Indian Colleges and who belong to the covenanted Service. I am sure, wiser counsel will prevail and a solution will be found favourable to the cause of the Indian graduates.

11. In your address you have referred to the difference in treatment meted out to the Military Assistant Surgeons and to the Military Sub-Assistant Surgeons, though both of them pass the same preliminary examination and undergo the same 4 years' training, yet the former is favoured with distinctly better prospects in service than the latter. On a superficial glance, it seems unfair that such distinctions based on colour question should be shown to one class in preference to the other but from the assurance of the present Viceroy, His Excellency Lord Reading, conveyed in his earlier utterances that no colour question should be a bar to promotions to higher services, I would advise you to make further representations to him direct. I am unfortunately not conversant with the Military requirements and

am not in a position to offer any constructive criticism on the subject. Besides, it is a matter for the Imperial Government to decide and they are the best judges. But it strikes me that it is not actually the colour that has influenced the Lovett Committee to recommend such generous proposals to the Military Assistant Surgeons but because they have been found better fitted to serve in a British Regiment than an Indian unaccustomed to the ways and manners of a British soldier. Their number being numerically small, better inducement had to be offered to enlist them for service. Though they pass only the Matriculation test like you, you will admit that they possess a better working knowledge of the English language than Indians, who have passed the same test. Indirectly the colour comes in but it is not because he is white but he happens to be white through his European origin. This is how I view the situation.

12. One other point I wish to touch upon before I close my address. I refer to the stipendiary pupils undergoing training in medicine, under a bond to serve their Governments for 7 or 10 years after completing their course. Here too in Mysore, we have the same system in vogue for the past several years and it has not produced any hardship with the recipients of such stipends so far as I am aware of. I don't think the term "Indentured labour" can be appropriate to a system of public utility which enables the holder to study a useful profession and to become the bread-winner of his family, which he could not otherwise have done without such timely help. It is hardly fair to expect the Governments to distribute these sums freely without any prospect of a return either in coin or in kind. On the other hand, the recipients should be ever thankful for the timely help rendered at an opportune moment when such help was needed most. If the terms are not agreeable, it is always open to the recipients either to reject the stipends or to pay back the sum at the end of their course and absolve themselves from their obligation to Government. The fact that a sum of Rs. 1,000 cannot be refunded by them, shows the necessity for such help to many a deserving case. Perhaps, a brilliant student, who for the want of timely help would have drifted away in some direction uncongenial to his mental capacity finds a ready avenue here. The

same argument applies equally to those who proceed to foreign countries with Government help and they are ever thankful for the timely opportunities given to them by Government, either as a loan or as a free scholarship with a bond to serve the Government in either case.

13. I have now come to the end. It only remains for me to add that I wish your Association a successful career and I hope that it will grow more and more in strength and in its usefulness, to promote the social, intellectual and the moral progress of its members.

14. I thank you all once more for the honour you have conferred on me and let me assure you that it will always give me very great pleasure to be of any service to your Association.

NOTES ON VITAMINES AND DEFICIENCY DISEASES*.

BY

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We were taught that the chief constituents of foods are proteins, fats, carbohydrates and salts. But clinical and experimental observations show that food contains something more than albumin, globulin, glutelin, casein, stearin, pabutin, olen, sugar, starch and dextrine. Very many foods contain an exceedingly small but important amount of accessory substances, which have recently been shown to be essential for the growth, development and well-being of the organism. When these substances are excluded from the food, the body suffers, and sooner or later becomes subject to various diseases. What these substances are and the role they play in metabolism are subjects of considerable discussion and investigation. Light has been thrown on them by recent researches. Various substances have been isolated whose presence in foods influences favourably the well-being of the

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organism and whose absence tends to the opposite condition. Among these are the substances called vitamins.

When vitamins are withheld from food, as when chemically pure proteins, fats, carbohydrates, salts and water are administered, health deteriorates, in young animals growth ceases, and, if the treatment is continued, death is the inevitable result. Health can be at once re-established if the diet is amplified by adding to it a natural food, such as, a small amount of milk, for foods as they occur in nature contain the accessory factors necessary for growth and maintenance. It is therefore patent that the many treated, purified and sophisticated foods at present on the market are but poor substitutes for NATURE'S foods.

The word 'vitamine' may be objectionable in itself, but it is certainly less cumbersome than the expression 'accessory food factor' which has been suggested as a substitute. The actual word employed is after all of small moment; the important point is what it connotes.

Professor F. G. Hopkins of Cambridge, to whom we are indebted for the recently acquired knowledge on this subject, has suggested a useful simile to help us to understand the problem.

"If a house is to be built it is bricks and wood which bulk largely in the necessary supply. The bulk of necessary nails is out of all proportion small and even that of the mortar is relatively small; but it would be impossible to erect a normal house without at least a minimal supply of nails and mortar. Without them the rest of the building materials would, from the standpoint of a future tenant, be useless. The analogy just used may indeed be wrong. Vitamins may not be concerned with the structure of the tissues, but rather as stimulants or catalysts, with dynamic processes in the tissues. In any case they are nutritive essentials not directly concerned with the supply of potential energy."

The chemical structure of the vitamins is not yet known. But researches have proved the existence of more than one vitamin and that they are the products of the plant world. It is on plants that all animals ultimately live. So far as is at present known animals are not able to synthesize or manufacture

vitamines. The vitamins can be separated by their varying solubilities in water, alcohol and other agents; they can be distinguished by their varying powers of resistance to heat and other drastic agencies; and, further, they are differently distributed in varying parts of the vegetable world.

The diseases due to the absence of vitamins are now known as deficiency diseases. Among such diseases are:—Beriberi, Rickets, Scurvy, Pellagra. We now know that there are at least three kinds of vitamins, each one of them having its own function in nutrition. What then are the evidences for their existence?

Suppose an animal to be upon an artificial diet—a mixture containing a pure protein such as purified casein from milks purified starch and pure sugar, together with a *vegetable* fat and the requisite mineral salts. What is the result? Normal growth will fail. Young animals cease to grow and all animals, even adults, sooner or later, die.

But suppose the fat supplied in the artificial mixture to have been butter or any other animal fat. Then growth will occur if we merely add to the mixture small quantities of watery extract made from various plant or animal tissues. A watery extract of the wheat grain, especially of the cortex or embryo of the wheat or a watery extract of rice-polishings, is all that is necessary to convert the above by itself useless diet into a useful one. The watery extract evidently contains a small quantity of a substance soluble in water.

Suppose, however, that instead of animal fat, we have supplied in the original mixture a pure vegetable fat. Then the addition of the just-mentioned watery extract alone may be quite ineffective; they fail to make the diet one which will sustain the animal. Replace the vegetable fat with butter once more and give the watery extract; the animal will thrive.

Now the vegetable fat is a perfectly good food. As fat, as serving the special purpose of fat itself in the body, there is no reason to doubt it is as good as animal fat. But it lacks some constituent which the latter contains, though that something is present in very small quantities.

From the above experiments it will be seen that there are at least two vitamins of importance to nutrition; one associated with certain fats and one soluble in water. Both must be present in sufficient amount in any dietary providing proper nutrition. Following the American suggestion we now speak of them respectively as the "Fat-soluble A" and the "Water-soluble B."

That it is the deficiency of a third kind of vitamin which is the cause of scurvy has been abundantly proved. This vitamin is present in fruits and fresh vegetables. Unlike fat-soluble A and water-soluble B, this is very unstable. It is dubbed "water-soluble C." Fat-soluble A and water-soluble B show considerable resistance to heat and do not necessarily disappear when food-stuffs are kept, even for long periods, whereas water-soluble C is rapidly destroyed when fresh food-stuffs are heated, dried even at low temperatures, or kept too long.

Fat-soluble A is contained in the majority of animal fats with the exception of lard (pig fat) and is particularly abundant in butter fat and in certain fish oils, such as, cod-liver oil. It is present also in yolk of egg and green leaves. It is specially important as a growth factor and is therefore indispensable in early life. It is present in very small or negligible amount in vegetable oils, as, for example, linseed oil, olive oil, cotton-seed oil, cocoanut oil, palm oil, pea-nut or arachis oil is reported to contain it in larger amount.

The absence of the fat-soluble vitamin from vegetable fats is not due to its absence from the vegetable structures—seeds, etc.—from which the facts are derived, but to the fact that it is left behind when the fats and oils are expressed or extracted. We can therefore understand the value of milk for the young and the potency of cod-liver oil in curing mal-nutrition. We can also see the danger of vegetable margarines if employed as the only source of fat in the food of the young and or expectant mothers. There is accumulating evidence to show that the absence or deficiency of the fat-soluble vitamin is an etiological factor in rickets. Hence it is known as the *anti-rachitic vitamin*. Like water-soluble B, it is ultimately a vegetable product and is

contained in high concentration in the green portions of plants. While green leaf vegetables contain the fat-soluble factor, root vegetables are deficient in it. Fat-soluble A, when associated with fats, is not extracted by water, but is soluble in solvents which dissolve fats, *e. g.*, ether, ligroin and alcohol. It cannot however be extracted by fat solvents from green leaves. Fat-soluble A is gradually destroyed at 100° C. and four hours' exposure to that temperature is sufficient to render butter fat of little greater nutritive value from the standpoint of vitamin supply than an equivalent quantity of lard.

Water-soluble B is contained in the embryo or germ of cereal seeds and in the outer hulls of grains. When milling is carried to high degree this portion of the grain is removed; hence polished rice and superfine wheat-flour, though they may appeal to the aesthetic sense, are of inferior value as foods. It is now firmly established that beri-beri is due to the use of polished rice and can be prevented or cured by adding the polishings to the diet. Polished rice produces the disease not because it contains a poison, but because it lacks the vitamin. As the absence or deficiency of this vitamin produces the degenerations in nerves characteristic of beri-beri, the vitamin water-soluble B is also known as anti-neuritic vitamin. Water-soluble B is also found in milk, skim milk, green leaves of plants and in fruits.

Its principal sources are the seeds of plants and the eggs of animals, where it is deposited, apparently as a reserve for the nutrition of the young off-spring. Highly cellular organs, such as the liver and brain, contain considerable amounts of the vitamin; flesh contains comparatively little; yeast cells are a rich source; so also are yeast extracts, *e. g.*, 'marmite.' Though this vitamin is present in large quantity in yeast, it is a note-worthy fact that beer or ale has not been found to contain it. In the case of peas, beans and other pulses, this vitamin is distributed throughout the seed, but with cereals it is concentrated in the germ (embryo) and the pericarp layer of the seed which in milling is peeled off with the pericarp and forms the bran.

Water-soluble B can be extracted by alcohol from most of the food-stuffs in which it is found. It is also soluble in water.

It is not, as a general use, extracted by ether or other fat solvents.

Water-soluble C is found in milk and in the juices of fruits (pre-eminently in the orange and lemon and tomato) and in most edible or green vegetables (cabbage, spinach, etc.). It is characterized by its instability being destroyed by moderately high temperatures, treatment with alkali, by desiccation except in an acid medium, canning processes, and the like. The absence or deficiency of this vitamin produces scurvy. Hence arises the value of fresh fruits and vegetables in the prevention of scurvy. Water-soluble C is known as the anti-scorbutic vitamin.

A—VITAMINOSES OR DEFICIENCY DISEASES.

Beri-Beri.

The Japanese navy was greatly afflicted by beri-beri, which was a form of peripheral neuritis, until a few years ago. As many as a fourth of the crew had the disease. Baron Takaki studied modern medicine in other countries, understood the cause of this disease, instituted an improved ration for the crew and completely eradicated the disease in the navy.

In the Straits Settlements, the Chinese population suffered severely from beri-beri, whereas the Tamils were exempt. Rice was the main article of diet with both the Chinese and the Tamils but there was this difference:—The Tamils store their rice and boil it in husk, whereas the Chinese use husked white rice. The greater susceptibility of the Chinese to beri-beri cannot be due to any racial peculiarity, for the Tamils in prison who are fed on milled rice are just as liable as the Chinese.

A peripheral neuritis resembling beri-beri has been produced in pigeons by feeding them exclusively on polished rice. When small quantities of husk are added, the birds rapidly recover.

It has been shown that the infant of a mother fed on polished rice is likely to develop beri-beri. The infant recovers if fresh cow's milk or a watery extract of rice polishings is added to the diet.

The substitution of par-boiled for polished rice in a Siam prison has brought down the death rate from 1.3 to nil.

The above facts are sufficiently conclusive that the disease is due to the deficiency of the anti-neuritic vitamin contained in the coat of the rice grain which is removed in the milling and polishing processes.

It is not the coarse fibro husk that contains so much of the anti-neuritic substances, but the thin film or 'silver skin' just covering the grain, wherein also lies the embryo. The vitamin is soluble in water and can be isolated in crystalline form. It is said to belong to the pyrimidine group.

The advantages of using unpolished and unmilled rice and cooking it by steaming instead of boiling are evident. And yet we discard the vitamins in our household method of cooking rice.

Wheat embryo, wheat bran, yeast and yolk of egg also contain fair quantities of this anti-neuritic vitamin; milk and meat only hold traces.

McCarrison has shown that it is not only the nerves that are affected by a diet restricted to polished rice. The thymus, testis, ovaries and spleen all atrophy and in a less degree the pancreas, heart, liver and kidney. The suprarenals, on the other hand, become hypertrophied and there is usually oedema, which seems to run parallel to the degree of enlargement of the suprarenals.

From McCarrison's researches it will be seen that in beri-beri there is more than a functional and degenerative condition of the nervous system—that it is one in which every organ and tissue of the body is involved. The organs of digestion and assimilation are particularly affected and thus many of the symptoms owe their existence to the chronic inanition so produced. The lowered vitality then renders the body an easy prey to infectious and parasitic agents and thus other symptoms become explicable.

"The manifold toxic influences to which human beings are subjected under conditions of food deficiency must play an important part in further depressing the functional activity of these organs and tissues on which normal metabolism is dependent. The toxic products of intestinal bacteria or intestinal parasites may thus assume a role thus of high importance in the genesis of morbid states which are, no doubt, initiated by the dietetic defect."

Rickets.

Infants who are usually fed upon a diet containing too much starch and sugar and too little fat and protein are liable to rickets.

According to Noel Paton and his co-workers in the Glasgow School, rickets is due to *lack of fresh air and exercise*. They produce the following evidences:—

- (1) Administration of cod-liver oil did not prevent rickets in animals confined in cages in the Glasgow Zoo, whereas at the Hamburg Zoo where animals are allowed great open spaces, rickets is not seen to manifest itself.
- (2) There was little difference in the dietary of the healthy and rachitic children of the hospital class in Glasgow.
- (3) In children living in small, crowded, ill-ventilated rooms and children seldom taken out for airing the proportionate incidence of rickets was high.
- (4) Puppies kept in the laboratory are much more prone to rickets than those allowed to run wild in the country.
- (5) A particular instance is quoted of two identically fed puppies, one belonging to an active boy and the other to his invalid cousin: the latter developed rickets because it was more cooped up.

On the other hand the researches of Mellanbys attribute rickets to the *deprivation of a fat-soluble vitamin*. They produce the following evidences:—

- (1) Pups fed on a diet containing bread, meat, oat meal, linseed oil, yeast, orange-juice and an inadequate amount of milk developed rickets constantly in a few months. Giving more milk or animal fats prevents rickets.
- (2) When pups have plenty of milk confinement does not make them rickety.
- (3) Eskimo children are cooped up all the winter in huts but get plenty of animal fats and therefore rickets does not occur in them.

(4) In an American Negro baby clinic of 32 infants given 54 oz. of cod-liver oil in 6 months, only two were rachitic; of 16 given none, all but one became rickety.

(5) Experience surely teaches that milk, cream and cod-liver oil are curative.

The existence of the above two theories go to show that it has not yet been conclusively proved that rickets is a pure food deficiency disease. Evidently in addition to deficiency in the anti-rachitic vitamine fat-soluble A in the diet, there are probably other factors at work. Whatever the individual factors are whose absence contributes to the causation of rickets, there is ample evidence to prove that, where fresh milk is lacking for infants, rickets will appear. When fresh milk is unobtainable cod-liver oil offers the most compact, most portable and most storable remedy.

Prevention of Rickets.—Infants and young children must be supplied with the right kind of fat. To prevent rickets (1) full cream milk should be secured for artificially-fed infants when possible; failing that (2) full cream dried milk or (3) full cream unsweetened cow's milk, (2) is preferred to (3) and in case of ignorant or careless mothers even to (1) in order to prevent spread of infection and intestinal disorders. In all cases where (2) or (3) are used an extra anti-scorbutic should be given.

Milk and butter are the best sources of the anti-rachitic factor for young and growing children. If butter is not procurable, cod-liver oil or eggs may be substituted.

Green leaves are a cheap and readily available source of the fat-soluble vitamine and adults can probably maintain good health when animal fats are substituted by vegetable fats if green leaf vegetables are consumed in fair quantity. In the case of this vitamine, the loss involved in ordinary cooking is not serious.

Pregnant and nursing mothers should have as liberal a supply of the fat-soluble factor as possible. Breast-fed children may also suffer from rickets.

Scurvy.

The disease is common in infants fed upon boiled, stale or artificially-prepared milk. Infantile scurvy is known as Barlow's

disease. Scurvy is not a disease of infants only. It is met with in all ages.

In adults the early symptoms are—lassitude, inability to think or work and general debility. Later on the following symptoms:—Swollen gums, loose teeth, hæmorrhages from the mucous membranes and beneath the skin and periosteum and grave anæmia.

In infants the symptoms are:—failure to gain in weight, sallow complexion, slight œdema of the upper eyelids, peevishness, capricious appetite, lividity of the gums and peridental hæmorrhage, petechial hæmorrhages, tenderness of the lower thighs, slight œdema over the crests of the tibia, exaggeration of knee jerk, diminished urine with a trace of albumin, rapid pulse. The asthenia is extreme and suggestive of muscular paralysis. Erratic rises of temperature. The essential lesion is a subperiosteal extravasation which causes a thickening and tenderness in the shafts of the bones.

In the scurvy of adults as well as that of children the skin becomes dry; the nails are thin and brittle; the hair becomes thin and dry. There may be actual eczema which yields promptly to an anti-scorbutic. A similar skin lesion is one of the typical signs of pellagra and eczema has been described in infantile beri-beri.

It is known for a long time that lime or lemon-juice and fresh vegetables are the main preventives of scurvy. But we do not know how they acted in preventing or curing the disease. Even from the days of Robinson Crusoe the anti-scorbutic properties of lemons, fresh fruit and vegetables were known but not until the use of fresh fruits became compulsory in the merchant service since 1844, that the disease declined among the men of the navy.

The following facts have now come to be established.—

- (1) Lemon-juice has four times the anti-scorbutic power of lime-juice. Oranges are as good as lemons and the fruit is better than the bottled juice.
- (2) The anti-scorbutic power of fresh meat is low; about four pounds a day is needed in man, whereas an ounce of lemon-juice will do.

- (3) Dried peas and beans develop the vitamine, if they are allowed to germinate. They are soaked in water for 24 hours and kept moist with access of air for 1 to 3 days, by which time they will have sprouted. This sprouted material possesses an anti-scorbutic value equal to that of many fresh vegetables and should be cooked in the ordinary way for as short a time as possible.
- (4) The richest sources of the anti-scorbutic vitamine are such vegetables as cabbage, swedes, turnips, lettuce, water-cress and such fruits as lemons, oranges, raspberries, tomatoes. Inferior in value are potatoes, carrots, French beans, scarlet runners, beetroot, mangolds and also (contrary to popular belief) lime juice. These vegetables if cooked too long lose the vitamine. Apples and bananas contain the vitamine in less degree.
- (5) This vitamine is destroyed when the fresh food-stuffs containing it are subjected to heat, drying or other methods of preservation.
- (6) All dry food-stuffs are deficient in anti-scorbutic properties; such as cereals, pulses, dried vegetables and dried milk.
- (7) Tinned vegetables and tinned meat are also deficient in anti-scorbutic principle.
- (8) Fresh milk contains the vitamine but it is lost on boiling for more than 5 minutes. It disappears in stale or dried milk.
- (9) Canned tomatoes, owing to the acid they contain, possess a high degree of anti-scorbutic power. It is probable that acid fruits and vegetables are able to withstand the canning process.
- (10) Alkalinization of milk is responsible for much scurvy among infants. It has been shown that the addition of sodium-citrate to milk destroys the anti-scorbutic vitamine.

- (11) Just as acid acts as a preservative for the vitamine C, so does alkali seem to destroy it. Cooking with soda, for instance, appears to be specially deleterious to vitamins. This is considered to be one of the reasons why pellagra is so prevalent in parts of the south of the United States, where bread raised with yeast is hardly known, their flour being almost wholly baked in the form of soda biscuits. The soda destroys the vitamins.
- (12) It has now been definitely determined that cows fed on concentrates such as oil-cake, bran, molasses, or dried hay, secrete markedly less vitamine in their milk, especially of the type C, than those that are at pasture. That green grass should produce more C vitamins in cow's milk than oil-cake or dried hay is not surprising, because the bodies of mammals do not produce vitamins. They are ingested, eaten with food.

Prevention of scurvy in adults.—The disease is prevented by the use of fresh vegetables or fruits. When these are scarce or absent an anti-scorbutic food can be prepared by moistening any available seeds (wheat, barley, rye, peas, beans, lentils) and allowing them to germinate. Salads are of more value than cooked vegetables.

Infantile scurvy—the most suitable anti-scorbutic material to use is fresh orange juice; 1 to 3 or 4 teaspoonfuls daily according to age. Raw swede (or, if unavailable, turnip) juice, is a potent anti-scorbutic and an excellent substitute for orange juice; to obtain the juice the clean cut surface is grated on an ordinary kitchen grater and the pulp obtained is squeezed in muslin. Tomato juice, even from canned tomatoes and grape juice, can also be used. Grape juice is less potent than orange juice and therefore a larger dose of the former should be given. If babies are breast-fed, it is important that pregnant and nursing mothers should receive an adequate supply of anti-scorbutic food in their diet. The popular belief that green vegetables are harmful to pregnant and nursing women is without foundation. Infantile scurvy is not unknown in breast-fed children.

surgeon will be available near by to whom he may be sent. It is notorious that an ordinary Indian patient is loath to travel 40 to 50 miles when he is suffering from a surgical emergency. It is the duty of every private and dispensary practitioner to equip his surgery with a store, a steriliser of Schimmelbush pattern and be prepared to undertake all emergencies. I know annually many valuable lives are lost from intestinal obstruction, strangulated hernia, a ruptured gastric ulcer; a timely tracheotomy may save many lives. To ask a poor man or woman to take a little child with a little discharge from the ear to go to headquarters for the adenoids to be scraped is an advice which will not be heeded. I would even say that the conscience of the private practitioners in rural areas and the common duty of the inspecting medical officers of dispensaries would equip these places for the proper treatment of all fractures and dislocations for elevating a depressed fracture of skull, for doing tracheotomy, for opening a liver abscess, for resecting a rib, for an empyaema, for treatment of haemorrhage, shock, burns, scalds, syphilis, gonorrhoea, tetanus, snake-bite, strangulated hernia, stricture of urethra, retention of urine, inflammatory and suppurating joint diseases, tuberculosis of joints (which can be well treated at the patient's home; at present the accommodation in hospitals will not allow of a prolonged stay of 6 months to 1½ yrs.), foreign bodies, ear, eye, nose, enlarged tonsils, adenoids, as otitis media, osteomyelitis etc. I think good many lives will be saved, good deal of deformities will be prevented if the general practitioner realises his responsibilities as a surgeon.

One another duty to surgery the practitioner has and that is early diagnosis. The succeeding rather long array is mainly meant to show when the general practitioner has to advise and press for an operation in the ordinary routine. An early diagnosis will bring the patient to the surgeon at an opportune time; the end results of the operation are good and the mortality much less. I have estimated from the surgical returns of this presidency that the majority of operative work done forms an average of only 5 per cent of all operative work. Great is the glory of the practitioner who in addition to his preventive and operative surgery becomes a great factor in the end results of the major operative

work. If the general practitioner is conscientious it would be possible to reduce even this 5 per cent to 1 per cent. All malignant diseases, acute abdomens, amputations as a result of diseases, excision of joints, pus tubes, neavus of bones, operations on stomach, operations for ununited and malunited fractures etc., should become a rarity.

Especially in this country the operating surgeons have no means of knowing the end results of their operations. The general practitioner could help a good deal in reporting cases which will go a great way in arriving at proper conclusions. It is with these ideas the following notes are abridged from Rendle Short's "When to operate in general practice?" The hope that these notes will be of some value to my brother members is the only apology for such profuse extracts.

Every year 1500 patients die of appendicitis in U. K. Sir Berkley Moynihan declares that he has never seen a perforated appendix in which the catastrophe has not been precipitated by an aperient.

Immediate removal of the appendix, perforated or not, during the 1st 24 hours has a mortality of 1·2 per cent; during the 1st 48 hours of less than 3 per cent; if the appendix is not perforated the mortality is only 3 per cent. The rate for all cases on the 3rd day has risen to 8·7 per cent. Perforated cases risk a plentiful crop of complications. In 1905 Lett. published 1000 cases of appendicitis acute and relapsing treated at the London Hospital on the 'wait-and-see' principle; the mortality was 17·2 per cent. In 1914 he published a second series of 1000 cases treated by immediate operation. The mortality fell to 3·2 per cent. The mortality of operation for a non-perforated appendix during an acute attack (0·3 per cent) is no higher than that of the interval operation (0·7 per cent.)

Disappearance of pain and tenderness, without improvement in other directions, may indicate gangrene of the appendix. In non-operated cases, 50 per cent get further attacks. 8 per cent of

recurrences are within 2 years. In cases where localized abscesses form, the appendix has to be left behind (only the abscess is drained) and there is a risk of 17 per cent of faecal fistula forming. Mortality for a local abscess is 3.3 per cent. Appendicitis in children is peculiarly treacherous.

Gall stones.—Operation is urgently indicated as the only means of saving life or rendering it tolerable in the following conditions

- (1) Many, frequent, severe attacks of gall stone colic.
- (2) Persistent jaundice due to stone impacted in the common duct. Diagnose this variety from simple catarrhal; associated with splenomegaly, cirrhotic pancreatitis and malignant disease of pancreas or bile ducts. Catarrhal jaundice must clear up at the most in 4 weeks. "I have been struck by the frequency with which catarrhal jaundice in young adults leads to the development of biliary calculi in later years, presumably on account of the infection of the gall bladder.
- (3) Hydrops of the gall bladder—there is a stone in the cystic duct.
- (4) Empyema of the gall bladder.
- (5) Perforation of the gall bladder by a stone, causing peritonitis.
- (6) Intestinal obstruction by a gall stone.
- (7) *Acute cholecystitis.*—Very often mistaken for appendicitis. To interfere in the presence of septic complications is a hazardous business. Death rate is nearly 50 per cent. If it is necessary to operate for gall stones in the presence of sepsis, about 1 in 3 will die of liver abscess, peritonitis, chest complication etc; in these types of cases one should interfere only when the patient's life is in danger; that is, when the fever and tenderness (a) come on apart from a definite attack of gallstone colic (b) are associated with colic but persist 3 or 4 days without improvement (c) when there is a palpable empyema of the gall bladder as large as an orange (which shows that drainage through the bile ducts is blocked) or (d) if signs of peritonitis develop. On the other hand

a typical attack of gall stone which complicated by fever, should not be operated on at the time, in the absence of the above four danger signals.

Dyspepsia and Diarrhoea.—In the great majority the treatment is in the hands of a physician. The following are the indications for operation :—

- (1) Signs of dilatation of stomach due to pyloric obstruction—*atonic dilatation* is treated by lavage, drugs, and dieting. Vomiting is absent or only at long intervals in atonic cases—in obstructive cases it is frequent. The mortality of gastro-Jejunostomy in the presence of cancer is 20 per cent; in innocent cases it is 2 to 3 per cent (Mayo, Sherren).

Symptoms suggesting chronic gastric ulcer:—Pain after food (within an hour of taking), occasional vomiting, occasional hæmatemesis or melæna, loss of flesh and epigastric tenderness. Stomach is not dilated; no evidence of stasis on bismuth meal; occult blood in the stools; test meal may shew hyperchlorhydria. Every one of these signs may be present, and yet at the autopsy or operation the stomach may appear perfectly normal. At the Bristol Royal Infirmary, one in five of the explorations for gastric ulcer showed no ulcer at all. These negative cases had just as severe symptoms as the others in every respect. It is due to one of the four conditions—chronic appendicitis, gall stones, movable kidney, or neurosis. The first three of these conditions lead not only to the symptoms of gastric ulcer, but eventually to actual ulceration also; appendicitis or gall stones may give no direct or local evidence of their presence.

Before advising operation for patients with symptoms of chronic gastric ulcer, medical treatment ought to be given a fair trial.

Two ill-defined conditions have to be separated from true gastric ulcer. The first is visceroptosis including chronic intestinal stasis. The other is met with in young women, associated with obstinate constipation, anæmia and neuroses, in which everything is vomited, fluids just as much as solids: operation does no good.

Of 60 cases of gastric ulcer in private practice (Habershon), 24 died of perforation, hæmatemesis or exhaustion.

If a patient with pain after food, vomiting, and it may be hæmatemesis, is still unable to do his or her daily work fairly regularly after 3 months of proper medical treatment, operation should be advised unless there is a large neurotic element. The indications for operating on duodenal ulcer are the same as for gastric ulcer.

INTESTINAL OBSTRUCTION.

The hard fact is that until a few years ago, and perhaps even to-day, half the patients died. At St. Thomas' Hospital, from 1887 to 1907, of 400 innocent cases, 56·7 per cent died; of 137 malignant cases, 65 per cent. died. Acute intestinal obstruction should be diagnosed when there is absolute constipation (stoppage of faeces and flatus) for 48 hours, with colicky pain and vomiting more than once.

Distention and quickening pulse, with collapse, are late signs; faecal vomiting is not a sign of ordinary intestinal obstruction; it is significant of a grossly neglected case that will almost certainly die. If vomiting is incessant, or a lump is felt, or there is marked distention, or blood is passed per rectum, the diagnosis should be made much earlier and operation should be done without delay.

Intussusception:—The main points for diagnosis are, colicky pain coming on in paroxysms, pallor and passage of blood and mucus per rectum. Do not expect to feel a sausage shaped swelling: it is only palpable in half the cases. The attacks of screaming and drawing up the legs, followed by a quiet interval are far more valuable evidence. Better results are obtained in all cases by primary operation as soon as possible. Chronic intestinal obstruction is generally due to cancer of the colon. Every lump in an abdomen that might possibly be a carcinoma of the colon ought to be explored, unless it is clear that it is too fixed or metastases are already present. The mortality in one stage operation is 30 to 40 per cent, of the two-stage operation it is 16 per cent.

HERNIA AND STRANGULATED HERNIA.

The risk of strangulation is about 2 per cent. The herniated individuals who have no operation and wear no truss have a 30 per cent prospect of strangulation sooner or later. This is specially true of the umbilical and femoral varieties. In babies only operate if a truss fails to control the rupture. Do not operate on umbilical hernia. In children of the school age advise operation. Inguinal, femoral or umbilical hernias in adults under fifty, are better treated by operation, unless the patient is fat, bronchitic, phthisical, or diabetic, or the hernia is enormous. The mortality of the operation is under 1 in 200. The percentage of relapses after Bassini's operation is not more than 5. If relapse is going to occur it will usually be in the first year. It is generally due to suppuration, or to weakness of the abdominal muscles, evidenced by sagging over each Poupart's ligament. The end results of femoral and umbilical hernias are less satisfactory; after the old operation for femoral ruptures 30 per cent relapsed. The new procedure is to attack the neck of the sac above Poupart's ligament, and this probably gives permanent cures in about 90 per cent. The older methods of treating umbilical hernia only caused about half. Incisional hernias very seldom become strangulated. After the age of fifty or fifty five do not operate as a rule. *Strangulated and obstructed hernia:*—An immediate operation is necessary but taxis may be tried with a light band and not for more than three minutes. Taxis is not likely to do any harm if these two precautions are observed. In the old days, 10 to 15 per cent, of the cases treated by violent and prolonged taxis died. In recently strangulated babies, even when taxis failed, sling the child in its cot in an almost vertical position, head downwards, and giving a little chloral. The hernia is very likely to go back in a few hours. The present day mortality after inguinal and femoral herniotomy for strangulation is a little under 20 per cent. Remember that the lumps may be very small, and the signs of obstruction not absolute, in Richter's hernia; signs of obstruction associated with a big umbilical hernia may be due to impacted faeces, therefore try enemata and taxis before operating unless the impulse on coughing is already lost or the symptoms are urgent. Mortality in strangulated umbilical hernia is 1 in 3.

these the first two are more likely to go to cancer. About a quarter of the cases of leukoplakia eventually develop epithelioma. The patient should be examined once in a month and if any hard nodules or resistant ulcers appear, let them be excised under novocain and microscoped.

DISEASES OF THE BREAST.

Chronic affections of the breast other than lumps:—A patient may complain of pain in the breast, of bloody or serous discharge from the nipple, of soreness of the nipple, or of retraction of the nipple.

Pain in the breast without a definite lump is usually due to interstitial mastitis, or due to some extraneous cause. Painful interstitial mastitis is not uncommon in girls and young women. Operation is to be done only when ordinary measures do not relieve the pain. Bloody discharge from the nipple is seen in duct carcinoma, duct papilloma, and some forms of mastitis. The discharge from a mastitis looks exactly like blood, but it may not contain corpuscles. If the discharge recurs on two or three occasions, or if there is a lump, the breast should be explored along the line whereon pressure expels the most blood. A serous discharge does not *per se* demand operation.

Soreness of the nipple in a woman over 35 may be due to Pagot's disease, which is an inflamed oedema of the skin, due to underlying but impalpable cancer. It has to be diagnosed from sore nipples of lactation and from ordinary eczema. When an eczema of this region persists for one month in spite of ointments or lotions, or if any induration is present, excise the nipple and underlying structures, and have it microscoped by an expert. If he reports malignancy treat as schirrus, and remove the breast and glands. It is often a misfortune that X-Rays will often cure the visible manifestation of the disease. In two cases cancer appeared a year or two later, and proved fatal in spite of excision of breast and glands. In recent retraction of the nipple, it is one's duty to advise exploration, because cancer is the most likely cause.

Lumps in the breast:—The differential diagnosis is not of much use because it is seldom that one can pronounce a confident

verdict of innocence. Cancer is the commonest tumour in the breast of a woman over forty. The general law is first cut into the tumour; if malignant remove the breast and glands; if innocent, remove the tumour or, in some cases of mastitis, the breast tissues leaving the nipple. Chronic diffuse (lobular, interstitial) mastitis is the only chronic lumpy condition which does not always demand exploration. The breast must be carefully watched at intervals of a month or two, and if any one definite lump is felt with the flat hand, it should be cut down upon.

The following lumps in the breast, though innocent should all be removed,

(1) Chronic localized mastitis, chronic abscess and tuberculous abscess.

(2) Fibro-adenoma.—The hall mark of this condition is its great mobility. It is proved by the microscope and museum specimens, that in some instances these tumours may become malignant.

(3) Cysts which are often as hard as cancer. A cyst and schirrus is sometimes associated in the same mass of diffuse mastitis.

Sarcoma is rare, soft, rapidly growing, and fungating and calls for early removal.

When not to operate on a cancer:—?

Absolute contra-indications are:—

(1) Cancer en cuirasse

(2) Widespread sub-cutaneous nodules in the skin of the chest and abdomen.

(3) Secondary growths in the humerus, spine (evidenced by localized pain and rigidity in the back), liver, lungs, or other organs.

(4) Axillary glands adherent to the main vessels or nerves of the arm, or causing great swelling of the arm.

Relative contra-indications :—

(5) Growth fixed to pectoral muscles or chest wall.

(6) Palpable supraclavicular glands.

(7) Atropine schirrus of slow development in aged woman.

(8) Feeble, alcoholic, diabetic subjects and women over 75. Operation mortality in average cases is to 1 to 2 per cent. About half the cases remain free from recurrence for three or more years.

Renal pain :—Remember in the majority of cases renal colic without bleeding is *not* due to stone in the kidney. Two skiagrams should be taken. If calculi are present, they should be removed ; or the kidney will be irremediably destroyed. This is serious because many of the patients eventually develop a stone on the other side : Mortality is 2 per cent in uninfected cases and rises to 23 per cent. if sepsis has taken place. In early hydronephrosis, the patient may have to sleep on the affected side, so as to use the superincumbent weight of his abdominal viscera to keep the renal pelvis from distending too much. Needless to say, patients with abdominal pain from other causes do not want to sleep on the affected side. Nephralgia is a mere label and not a diagnosis.

Tuberculous kidney :—Suspect tubercle if there is frequency of micturition and pyuria. If there is no stricture, enlarged prostate or in women cystocele, get a catheter specimen and examine for tubercle and B coli. If tubercle is found it is almost certain that there is a lesion of one or both kidneys, because primary tuberculosis of the bladder is very rare if one exists at all. If the functions of the other kidney are adequate, nephrectomy is to be done. Active phthisis and spinal caries would bar the operation. Try tuberculin in inoperable cases. Palliative treatment seldom cures. Wildbly found 80 per cent. dead in 10 years, and only 6 per cent well after 5 years. The

death rate after nephrectomy is 30 per cent ; remote mortality up to 2 years is 10 to 15 per cent. About 60 per cent. are permanently cured.

BLADDER TROUBLES.

Haematuria :—Passage of blood in the water for one or two days does not call for any drastic measures. If the haemorrhage recurs after an interval, even if the loss of blood is very trifling, the bladder ought to be examined with the cystoscope. After two recurrences the investigation becomes urgent, because papilloma of the bladder the most probable cause is a semi-malignant tumour and early removal is of great importance. The risk is not great probably about 4 per cent. There is considerable danger of recurrence but it may be delayed for years ; of pedunculated growths 40 per cent. have recurred in the past ; of sessile 98 per cent. Symptomless hæmaturia is usually due to papilloma of the bladder or to some disease of one kidney (papilloma, nævous, patches of nephritis.)

Pain and frequency of micturition :—First ascertain if blood, crystals or pus are present in the urine and in the last case send a sterile catheter specimen to a bacteriologist. If tubercle bacilli, are discovered the case is one of renal tuberculosis.

Pain, frequency and haematuria raise the suspicion that there may be either a stone or a malignant growth in the bladder. Sound the bladder. Make a rectal examination ; malignant growths can usually be felt from the bowel ; benign papillomata cannot. The final diagnosis of epithelioma must be made by the cystoscope.

The rate of recurrence after removal of stone in the bladder is from 10 to 20 per cent. old prostate cases being the principal sufferers.

Cancer of the bladder frequency presents itself as a severe cystitis, and therefore all cases of cystitis in which the cause is not obvious, especially after 40 years of age, ought to be referred to surgeon for cystoscopy. Partial cystectomy can be done and mortality rate is 10 to 15 per cent. Great frequency of micturition in women, even amounting to incontinence, but without

much pain, may be due to prolapse of the anterior vaginal wall ; if a pessary does not relieve do an anterior colporrhaphy.

ENLARGED PROSTATE.

Of those patients who survive operation, 75 to 80 per cent are quite cured. The remainder suffer from calculus formation, suprapubic fistula, great frequency etc. The death rate after operation in 8 large British Hospitals from 1906 to 1912 was 20 to 35 per cent ; but Freyer and Walker report only 5 per cent. The supposed high rate is due to the fact that only bad cases were done and not the early cases. The normal treatment of enlarged prostate should be prostatectomy. When the only sign is slight frequency of micturition, perhaps every 3 hours by day and making the patient get up once during the night, and the residual urine is less than an ounce, no operation need be done especially if he is over 75. When the residual urine rises above an ounce, the time for delay is past.

It is great advantage to perform prostatectomy before the advent of cystitis or retention. With the exception of suprapubic cystotomy if cathetering is difficult or impossible, or inadvisable if the patient has well marked symptoms of uraemia, or bad bronchitis, or if the prostate feels cancerous.

A two stage operation is best in the presence of considerable cystitis, in many cases of acute retention, or a less severe degree of renal inadequacy.

INJURIES AND DISEASES OF THE URETHRA.

Injury of the urethra :—There are two main early indications for operation after a penile injury causing bleeding from the urethra ; haematoma along the line of the urethra or difficulty in passing the catheter. Traumatic stricture is a much more obstinate and troublesome complaint than ordinary post-gonorrhoeal stricture. Treated without operation almost all cases of ruptured urethra used to develop a serious obstruction. Do not wait for leakage of urine when sepsis supervenes in uncomplicated cases 14 per cent is the mortality rate out of 235 cases (Kaufmann). Rupture of the penile urethra seldom requires operation.

FRACTURES.

Clinton Dent published in 1908 the end results of fractures occurring in a picked body of men, the Metropolitan Police. A Pott fracture, a break of the femur, or a bone injury close to a joint almost invariably unfitted a man ever to resume work in the force.

The main conclusions of B.M.A's Committee of 1912 who examined nearly 300 hospital patients who had sustained a simple fracture during the 5 years preceding are :—(1) To obtain good functional results there must be good anatomical position. The causes of bad function may be incorrect alignments, or stiff joints. Shortening by itself is not detrimental if the alignment is good. (2) Fractures in patients under 15 nearly all do well (90.8 per cent ; the failures were principally fractures of the forearm). Fractures in those over 15 only yield a good result, in non-operated cases, in about half the total number (45.4 per cent). (3, Simple fractures operated on give a good result, in patients who are over 15) in 2/3 of the cases (66.3 per cent).

(4) The end results of fractures near joints in patients over 15, if treated without operation, are bad. (5) Early operation gives far better results than late operation for non-union. (6) The operation mortality is under 1 per cent. 1 per cent hospital cases.

Operate in :—T fracture of the lower end of the humerus or femur, fracture of the olecranon or patella with separation of half an inch or more, Depuytren's fracture, and fractures complicated by dislocation.

In acute osteomyelitis :—The best results are obtained by opening up the focus in the bone within the first day or two, when the signs are pain and commencing tenderness near (not in) the joint but before swelling of the bone is felt.

Persistent aching pain near the end of a long bone may be due to a chronic abscess.

Myeloid sarcoma and periosteal sarcoma of flat bones require operation. Periosteal sarcoma of the long bones is so very rarely benefitted by amputation, that operation is not worth while. Try Coley's fluid. Kocher in 1906 could collect from world's

literature only 15 cases of periosteal sarcoma of the long bones treated by amputation.

INJURIES AND DISEASES OF JOINTS.

Dislocation:—Of recent dislocations only the metacarpophalangeal joint of the thumb to be treated by tenotomy of the glenoid ligament by a posterior vertical incision and posterior dislocations of the foot, which may necessitate tenotomy of the tendo achillis.

Dislocation with fracture at elbow and shoulder operate. Old unreduced dislocations—do not operate if there is a fair range of movement without serious pain—but operate on unreduced dislocations of elbow.

Acute suppurative arthritis, following a perforating wound, pyaemia, or acute epiphysitis requires immediate incision.

Tuberculous arthritis:—The first rule is that the great majority of cases of tuberculous arthritis in children do not require any operation, or at most no more than an aspiration or simple incision to evacuate pus, the wound being sewn up without drainage unless the skin is so thin that secondary infection has already occurred.

Cases of hip disease:—Mortality 8 to 12 per cent. due to phthisis or sepsis: usually one to two inches shortening.

Tubercle of Knee:—50 per cent good result: 5 per cent die.

Tubercle of the ankle apart from operation was recovered from in a third of the cases.

The wrist is a favourable location in children; nearly all recover, and so do many adults; tubercle of the elbow is not so good: The shoulder and sacro-iliac joint are seldom affected in children.

The second rule is that if there is well marked swelling or bone destruction in an adult, and three months, fixation and other treatment fail to bring marked improvement, it is better to excise.

The third rule is that certain complications generally call for operation, whether in a child or adult:—These are (1) backward

displacement of the tibia at the knee joint, or considerable flexion (2) marked flexion at hip joint, old standing (3) most cases of sacro-iliac disease which seldom get well under conservative treatment. (4) Painful or useless ankylosis of the elbow—for instance, if the arm is fixed in a position of extension. (5) Extensive suppuration, sinus formation, bone destruction or extra-articular disease, whatever the joint. In the wrist and ankle, if anything beyond opening an abscess is necessary, it usually means amputation.

Abscess formation by itself does not call for excision in a child; in an adult it certainly points in that direction if connected with the knee, hip, sacro-iliac joint, elbow, shoulder, but not at the wrist or ankle.

Abdominal Injuries.—(1) Do not give morphia. Brandy, coffee, strychnine and saline are allowed, give warmth, rest in bed, and hot fomentations. See if the symptoms improve or get worse. If there is tenderness of the right iliac fossa after a contusion, take the temperature. The tenderness and rigidity of early appendicitis are only apt to be put down to the contusion. Shifting dullness in the flanks, white pallor, persistent localized rigidity and persistent vomiting are indications for operation.

THE EXHIBITION

WELCOME ADDRESS

The following address was delivered by Mr. P. Thirumalai Rao, L. M. P., in welcoming the delegates to the Exhibition held under the auspices of the Exhibition Committee.—

PRESIDENT, BREYHERN, LADIES & GENTLEMEN,

I deem it a great but undeserved an honour to have been asked to deliver this welcome address on behalf of the All-India Sub-Assistant Surgeons' Association Exhibition Committee. I am glad that the All India Sub-Assistant Surgeons' Association has thought it fit to assemble this year at Bangalore, the birth-place of the founder of the Association, the revered late lamented Mr. P. S. Ramachandraiya. It is with the greatest pleasure that we

welcome you this evening and express to you our most sincere thanks and gratitude for your presence here, although there have been many such functions simultaneously going on and which require your presence. I specially thank those who have come from the Cantonment side sacrificing their comforts and valuable time by going over such a distance. Their presence here to-day is a positive proof of the interest they take in the Health and Welfare Organisations and also their attachment to the Sub-Assistant Surgeons' class as a whole.

I feel I am not competent to dwell here upon the origin of the Association, its slow and steady progress and the useful work it has been doing for the past sixteen years. My brother, Mr. Damodaram, and able General Secretary, Dr. Serjuprasad, in his welcome address yesterday have clearly pointed out the activities, etc., and I am sure that amongst the distinguished guests of this evening, whom I find is composed of officials and non-officials, medical men, and lay public, ladies and gentlemen, there are many who know much more intimately and very much better of the Sub-Assistant Surgeons' class and their Association than I can know myself.

The year, 1916, marks an epoch in our history. That was the year when a Health and Welfare, Sanitary and Scientific Exhibition was organised by our Association at Madras and kindly opened by the then Governor His Excellency Lord Pentland. Ever since that time, the Association has continued to hold exhibitions and has been taking a remarkable increase in the interest in questions of health and the spread of knowledge of the elementary principles and personal and domestic hygiene and other allied subjects amongst the lay public.

Ignorance is darkness and the root-cause of all evils. The vast bulk of the population is quite ignorant of even the elements of personal hygiene. Neither education on the present lines nor good roads are worth very much to the individual if he does not have good health. There is need for enormous expansion in the direction of propaganda and teaching of the advantages and necessity of health precautions.

Col. Standage, our Residency Surgeon, in the welcome address he delivered at the Exhibition held in the C. & M. station in August last said, "It is not the Doctor's fault that a patient is ill, nor his fault if he does not get well at once, and not his fault if anything unfavourable occurs in the course of illness. In the majority of cases it is the fault of the patient himself that he has become ill, it is often his fault that his illness continues or takes an unfavourable course for he has not trained himself to recognise the disease in its early manifestations. He has neglected the studies which would inform him how to avoid the illness from which he suffers, how to recognise it when it occurs and how to act so that the course of the disease will be favourable."

Ladies and Gentlemen, the above is true not only with the illiterate and the poor who cannot afford to attend schools and receive education, but it is the case with the so called educated men also.

While dealing with the question of Health Education, the present Director-General of the Indian Medical Services, the Hon. Major General W. R. Edwards, C. B., C. M. G., C. S. I., K. H. S., writes:—"Poverty and ignorance are on the field. Poverty, we shall presumably have, always with us: but gross ignorance can and should be removed. It is very evident that if the whole community were systematically taught the elements of hygiene, things which are permitted now would no longer be tolerated. I refer not only to the gross ignorance of the very poor but the gross ignorance of the so-called educated classes concerning the laws of health. The pathetic part is that educated and uneducated alike are so absolutely ignorant of the science of hygiene that they are ignorant of their ignorance and such of the people who control Municipalities, who control expenditure and frame laws. *****The fact is entirely ignored that the whole system of general education is merely designed to add to the happiness and wealth of nations and that the foundation of all happiness and wealth is health."

Now, how could this ignorance of the really ignorant poor and the ignorant and still educated class be removed? What is the

easiest and most effective means of educating the public and of imparting some enthusiasm and initiative into their minds and make them take more interest in health affairs. One cannot surely pitch upon anything better than the organisation of Health and Welfare Exhibition and the conducting of lectures in as simple a language as could be understood by the laity. It is the exhibition which will enable one interested to understand the essentials of the various health subjects which concern himself, his family and the whole community as well. It is the exhibition that will give the public in its truest colours the advantages of vaccination, inoculation, calling in a qualified nurse at the time of confinement, etc. It is the exhibition that will open the eyes of the public to the horrors and the risk our women are exposed to at the hands of an untrained barber mid-wife during the time of her confinement. In fact it is the exhibition that will act as our guide and instructor in matters of public health.

Ladies and Gentlemen, I am sure you have all heard of the term, "Preventible Diseases". The term as it clearly denotes means diseases that spring directly from ignorance and could be avoided by educating the public as regards the causation of the diseases and their prevention and by adopting the standard hygienic principles. So the responsibility of the increase or the decrease in the mortality from these diseases, rests on the people themselves and on the health authorities as far as the work of educating the mass regarding the diseases and prevention is concerned. Plague, Small-pox, Tuberculosis and Malaria are some of the most important of the diseases we come across in Bangalore face to face every year. I would like to add to this group "Infantile Mortality" also. By infant mortality, is meant deaths of children under one year of age. "Infant Mortality after all," says Herbert Samuel, "is only a statistical expression of bad conditions by which infant life is surrounded."

George A. Walker says, "The children are the truest indices of the sanitary conditions of a crowded neighbourhood." All over the world, Government, Municipalities, Local Funds, District Boards, Private Organisations all have begun to handle this problem and have been devoting a major portion of their time and resources towards this aim.

As regards infant mortality, our latest returns are 281.42 per 1,000 births for the C. & M. Station, for the year 1920-21. During the last ten years 1911-1921, in the city of Bangalore lives of children have been lost before they saw their first year and 11,922 children in the C. & M. Station, Bangalore.

Plague claimed a large number of victims from the city and 8,579 from the C. & M. Station during the same decade. The municipalities of the city and the Station are sparing no pains to fight out this disease by anti-plague inoculation campaigns, rat-destruction, and by teaching the lay public as to the mode of transmission of the disease and what observe and what to do during the season.

From preventable diseases other than plague there have been deaths in the city and 2,744 deaths in the C. & M. Station during the last ten years.

Civic and Social Progress Association is doing a very useful work among the vastly deserving illiterate masses. Mahila Seva Samaj under the capable guidance of Mrs. Chandrashekhara Iyer and Doctors, Miss. Jhirad and Miss. Isaac, has been doing very useful work in the line of Maternity and Child-Welfare by holding periodical weekly lectures on the subject.

The Maternity and Child Welfare work and the municipal check which are being capably handled by the energetic Health Officer of the Station Municipality, Dr. M. S. Amritraj are undoubtedly responsible for the appreciable reduction in the infant and maternal mortality.

The educative value of such exhibitions and the substantial advantages of the establishments of such homes and the starting of Maternity and Welfare clinics and schemes have all been established beyond doubt. But any such organisation requires more of voluntary agencies to work up than of official one. In matters of disease and its prevention of cure, faith is of vital importance. Now-a-days it has been found that although the official agency in fact has the welfare of the nation at heart and bring in the system in working order, the lay public does not hesitate a moment to view the whole situation with a narrow mind

and begin to set up oppositions to the harmonious working. So the best course would be for people themselves to elect their own representatives to form the working agency. All the people in villages and small towns know and therefore trust in their representative and whatever advice is given or persuasion made, will be readily acceded to by the people. But such voluntary agency cannot stand on its own legs. It has to be backed up by official support materially and financially. Instances of such are:—Lady Chelmsford All India League for Maternity and child Welfare; S.P.S.K., Lahore; S. I. H. & W. Association, Madras; Social Service League, Bombay, Madras, etc., etc., etc.

I feel glad and proud to say that the C. & M. Station will have in the near future a Health Association—more of a non-official nature—this is the out-come of the untiring efforts and the energetic working of Col. Standage, the Residency Surgeon and Dr. Amritraj, the Health Officer, and it is gratifying to note that this proposal has the warmest support and sympathy of the worthy President, C. & M. Station, Mr. T. J. Tasker, whose sympathy with such movements and the keen interest he takes in the welfare work are clearly evinced from the whole-hearted support which he and the Commission gave to the last Exhibition.

I am confident that the city of Bangalore could count upon philanthropic men on a larger scale than the C. & M. Station and it could, therefore, be expected that the city people also will take up the initiative and bring about a similar Health Association. I need not here mention to you what amount of keen interest in such health and welfare affairs, is taken by the present Dewan, Rajasevadhurina Sirdar M. Kantaraj Urs, B.A., C.S.I.; Messrs. Albion Rajkumar Banerji, M.A., I.C.S., C.I.E.; P. Raghvendra Rao, B.A., B.L., (our worthy Chairman of this evening); Mir Humza Hussain, B.A., B.L., our sympathetic Dr. H. B. Mylvaghanam; Sanitary Commissioner, Dr. A. K. Pani L. M. S., etc., our generous President of the Committee, Dewan Bahadur K. P. Puttanna Chetty; our energetic Health Officer, Srinivasa Peidpet, M. G., not to speak of several other ladies and gentlemen equally interested in it.

Now coming back to our Exhibition, this Exhibition we have organised cannot compare itself with the Exhibition held at Madras and at Delhi, nor could it be compared to the one we recently had in the C. & M. Station. The Organising Committee were handicapped as exhibits from out-stations could not be procured—there being each and every where a similar show being run up during this Christmas season. I may tell you that the Organising Committee, at a certain stage even thought of abandoning the idea, but Drs. A. K. Pani, our Sanitary Commissioner and S. Amritraj, the Health Officer of the Station Municipality came to our rescue and kindly promised us the loan of all their charts and exhibits and helped us a good lot and permitted some of their subordinates to render all possible assistance. Our thanks are due to them all. To our worthy Chairman of this evening for his very kind acceptance to our invitation in spite of his heavy engagements and the season. Our thanks are due to the President of our Committee and to one and all on the Committee. I shall be failing in my duty if I do not thank all those who have been kind enough to take up subjects for lecturing in the evenings. Our warmest thanks are due to the delegates from different places and all ladies and gentlemen who have honoured our Association by their presence here this evening.

Now I request our worthy President of the Exhibition Committee, Dewan Bahadur K. P. Puttanna Chetty to welcome the guest.

ADDRESS TO THE PRESIDENT.

The following address was presented to Rajamantrapravina Mr. P. Raghvendra Rao, B.A., B.L., Second Member of Council, Government of Mysore, Bangalore, on the occasion of the opening of the Exhibition.

Sir,

On behalf of the members of the All-India Sub-Assistant Surgeons' Association, I feel it my bounden duty to express our gratefulness to you for having consented in spite of your onerous duties and the demands on your time to open the Exhibition

which is being held under the auspices of the sixteenth Annual Conference of the All-India Sub-Assistant Surgeons' Association.

We take pride and pleasure to inform you that it was in this city that the Association first saw the light of day and was rocked in its cradle by its founder, the late Dr. P. S. Ramachandriyer of the Mysore Medical Service.

To promote scientific knowledge, to help better understanding of the relationship and to maintain the honour and promote the interests of the class, and to increase the moral, mental, social and intellectual progress are the chief primary and vital aims of this Association.

We represent the humble class of medical men forming the bulk and backbone of the department. Our effort lies chiefly in the remotest corner of the country among those suffering masses who toil on the soil.

A delicate and a sore spot for me to tread upon is to say a few words regarding our status. In spite of four years' stiff course of training in a well-equipped recognised medical institution and in spite of their intelligent and satisfactory performance of their duties and in spite of their brilliant and untainted career, the Sub-Assistant Surgeons are doomed to be Sub-Assistant Surgeons.

Mysore has earned her name as a model State by rapid progress in every direction. Is it too much to expect of such a model State to give a lead to the rest of India in our case? Is it too much to expect of the course in the medical school, Bangalore, to be raised to five years? Is it too much to have the school affiliated to the University? Is it too much to expect an initial salary of Rs. 100 rising to Rs. 300 with an annual increment of Rs. 10? Is it too much to expect the meaningless "Sub" from the designation to be wiped off—a Sub which is looked down upon with contempt?

I appeal to you, learned Gentlemen, to spare a few leisure moments to compare with unprejudiced mind the various syllabuses of the Medical Schools, Colleges in India and other countries. And I am sure you will be impressed with the idea that the barrier is only an artificial one and not real.

No words are necessary from me to commend to you that the object of the Exhibition to be opened to-day may meet with your approval and support *i.e.*, Improvement of Science and its application for the amelioration of the lot of our countrymen. I now beg you to be so kind as to open the Exhibition.

Your presence here to-day and the patient hearing that our beloved Senior Surgeon has given us, bespeaks the assurance of success of our cause.

It is our fervent prayer that Almighty, the Creator, may grant you long life, health, happiness and prosperity.

ANNUAL REPORT.

The following report on the work of the Association was presented at the Conference by Rai Bahadur Surjupershad, General Secretary.

WORTHY PRESIDENT, LADIES AND GENTLEMEN,

I feel happy in presenting to you the 16th annual Report of the All India Sub-Assistant Surgeons' Association. This place of our meeting has peculiar charms of its own. So long, we held our annual meetings in practically all the Presidency towns and big cities with medico-educational activities. This year we meet in one of the premier Indian States. We do this for the 2nd time: you have not yet forgotten our visit to Indore in the 4th session. Again we feel peculiar pleasure in meeting here because Bangalore is the birth place of the late General Secretary Mr. P. S. Ramachander Iyer and it is this place which provided the founder of the Association with inspiration, as the result of which this body took its birth in Bombay 16 years ago. Thirdly, this session is important, because after being driven to disappointment by the guidance of the official year after year, we have chosen to be guided by a patriot from non-official ranks, whose keen interest in promoting the cause of medical education is well-known, and who is sure to guide us to goal from the Indian standpoint.

So far as the official recognition of the services of Sub-Assistant Surgeons is concerned, last year we seemed to reach the zenith of our glory. The head of the medical department in India, presided over the Delhi session, and the head of the Government of India condescended to open the scientific exhibition organized by us. Whatever had been the pernicious remarks levelled against us by

various persons responsible for medical administration in this country, regarding our worth, our war services and our place in the medical services in India, the Viceroy was disposed to think otherwise. His Excellency was pleased to observe "that ever since he had been in India, he had been hearing of the good though unobtrusive work done by the Sub-Assistant Surgeons. Your work lies largely in remote parts of this vast country and is performed chiefly amongst the voiceless masses and it is no doubt for these reasons that the high character of your services is principally known only to those amongst whom you work and to your immediate superiors." But, His Excellency continued, "those in authority, you may rest assured are in no way unmindful of what the administration and the country owe to you. I cannot think of any report on plague, famine, or other epidemic which I have read without finding a reference to the good work done by Sub-Assistant Surgeons and your praises are continually sung to me by those responsible for the medical administration of the country. During the great war you volunteered in large numbers and acquitted yourselves always with credit and often with distinction. Gentlemen, you have a fine record behind you and I can only exhort you to go forward and add to it".

This, His Excellency's observation, coupled with the statement of the Director-General, Indian Medical Services "that the Government of India itself not only fully recognize the value of your service and the great assistance you have given to India, both in peace and war, but also is most anxious to see your service a happy and contented one", is a fitting answer to whatever has been said against us so long. We need no longer bother ourselves with arguments to defend our war service.

Some retrospection is however necessary. Exactly a year after these memorable utterances as a result of which we really expected some material advance, unfortunately we find ourselves to-day where we were, nay a little behind. Our teaching institutions have undergone no change, the pay question is not given attention to, no step is so far taken to ameliorate our grievances regarding extension of course, higher education and the recognition

of our courses by the British Medical Council, and the invidious distinction between L. P. H. and D. P. H. courses is still maintained. The difference between the Military Assistant Surgeon and Military Sub-Assistant Surgeon based on racial bar is still perpetuated, the bond of indentured labour still continues to remain, in fact I see nothing is done during the year by the Government to exhort us to go forward and add to our fine record.

There are hardly the signs on the part of the authorities being anxious to see our service a happy and contented one. On the other hand nothing can be more disappointing. But we have learned how to meet disappointment. This lip sympathy has again strengthened my version in the last year's report that "personages like these have been very liberal in their opinion outside their office, but they have been equally conservative in their office chairs from where things have actually to be done."

As I have said, we were not slow in taking lessons from the present situation. The first step was taken by the President of our Association on 15th February 1921 by sending to the Government of India in reply to their reference a very comprehensive letter in the course of which he has most effectively expressed the view of our Association on the report of the Medical Service Re-organization Committee and summarized the same in 30 explicit items of demands. I do not know what fate it met, but it had surely one effect of throwing much light on the present miserable position of the Sub-Assistant Surgeons.

Reading between the lines of the Director-General's reply from the presidential chair of last year, one could clearly see the Director-General's justification of ten years' bond which we have been decrying so vehemently. The Delhi Conference therefore appointed a Committee to consider how best to cut short the supply of Sub-Assistant Surgeons for Government service. Dr. Sharma, under the auspices of the Committee, issued a pamphlet showing in details, the disadvantages of joining the Medical Schools unless and until the institutions and service conditions are improved. I am sure this booklet will have the desired effect in course of time.

is high time that we thought of becoming real public servants and in this vast country there is such a demand for qualified medical men that the public in their turn will very liberally support all of us if we start in private practice. Instances of Sub-Assistant Surgeons having been immensely benefitted by throwing off Government service are not wanting. Besides in such cases there is a distinct advantage of coupling our knowledge of western medicine, with most useful hints from the eastern science.

The report of the Lovett Committee seems to have been thrown over-board with the only exception of the introduction of ten years' bond. Enough has already been said on this point. Instead of saying anything more to Government I would earnestly appeal to all the intending students and their parents not to sign it, not to accept the far less tempting stipends and if they are unable to support themselves during the course not to join the Medical School at all. In no civilized country such an enslaving condition exists in educational institutions and so far as my knowledge goes, no student outside India ever thinks of binding himself in such a humiliating way. Let me hope that our youngsters possess brains with a faculty to understand what the bond means to them and even after full knowledge of the situation if they or their parents bind themselves to slavery for a third of their active life I am not prepared to blame the Government for enforcing it, as they have repeatedly warned us with a common sense law of "Demand and Supply".

As required by resolution No. 56 of the Poona Conference the accounts for 1920 were audited and sent for publication. By the end of 1920 we had a balance of Rs. 10,259-12-3 :—

	Rs.	A.	P.
(1) Five years Postal cash certificates.	5,812	8	0
(2) Government Promissory Notes	500	0	0
(3) Postal Bank, Ahmedabad.	401	14	8
(4) Fixed Deposit in the Imperial Bank of India, Ahmedabad.	1,500	0	0
(5) Punjab National Bank, Karachi	353	15	0
(6) With various office bearers.	1,691	6	7
Total	10,259	12	3

The total approximate income for the year under report is Rs. 9,683-1-6 in cash. The final figure of expenditure of the current year is not yet ready, but I am sure it is below the income thus leaving some balance for the next year. In this connection I have to thank Dr. G. D. Khandekar, the Treasurer and the Finance Committee for the vigilant care, with which they worked and controlled the finances of the Association.

Throughout India and Burma, there are 51 branches of the Association out of which five have been opened this year. Out of these 35 have been active all round the year. All these held regular monthly meetings for the purpose of scientific and material advancement of the class. The remaining 16 branches were not even heard of, as if they did not exist. It pains me to record here the extreme apathy in some quarters for the work of the Association. If everybody, at any rate every Branch Secretary, means to help the cause of the Association he can easily do it, not for the sake of others, but for his own benefit.

In the end I very earnestly appeal to Government, the times are hard and the lot of the Sub-Assistant Surgeon is harder still. Simply singing our praises to the Viceroy will no longer do. Let the word of His Excellency the ex-Viceroy, which raised our hopes last year, prevail. Hope deferred makes the heart sick. It is this heart sickness that is at the root of the present discontent amongst Sub-Assistant Surgeons. Our feelings have become very tense and small wonder that we refuse to delude ourselves by drinking deep at the fount of more pious hopes. Any unnecessary delay in fulfilling our right demands, if the Government at all desire to fulfil them, is likely to cause a rupture which I am very loath to anticipate.

Should such a time unfortunately come let my brother Sub-Assistant Surgeons understand how to overcome disappointment and learn to face the new situation with patience, fortitude, and courage and after a short but successful constitutional fight we will find ourselves happy and contented.

I cannot close this report without thanking very cordially all my colleagues, for the willing help I received at their hands. A new situation had arisen by the resignation of Dr. Rochiram of

the Treasurer's office and by the absence of myself and the Joint General Secretary in Europe for about 6 months. My special thanks are due to Drs. Khandekar and Apte of Indore for very successfully meeting it and carrying on the work through.

I thank you all for the patient hearing.

TEXT OF RESOLUTIONS.

The following resolutions were passed at the Conference.

1. *Resolved* that this Conference of the All-India Sub-Assistant Surgeons' Association offer its most cordial and hearty welcome to His Royal Highness the Prince of Wales to this country and tender our loyal greetings.

2. *Resolved* that after 16 years full consideration and consultation with the persons in authority this Conference has come to the conclusion that the minimum requirements of the western system of medical education is a fixed preliminary educational standard and a full five years' curriculum in a well equipped teaching institution as fixed by the British Medical Council. This Conference therefore urges upon the Government and Ministers in charge of Education to concentrate all resources of medical training to adopt such complete courses and abolish all the other hap-hazard methods of creating men, who constitute none but quacks and unfit for registration in the eye of the world.

3. *Resolved* that while feeling grateful to the increase of pay in certain Provinces, though considered still inadequate and unsatisfactory, the Conference draws the attention of such Provinces, Indian States, Railway authorities and other public bodies who have not yet adopted the increment to sanction a uniform scale of Rs. 100 to Rs. 350 immediately to allay the growing discontent of the class. In Burma it is recommended that the scale should be Rs. 150 to Rs. 400.

4. *Resolved* that the following allowances may also be raised.—

- (a) Charge allowance when in an independent charge of a hospital or dispensary to be Rs. 25 per mensem.
- (b) In case of teaching appointments of Medical Schools as well as appointments where there is no chance of private practice or where private practice is prohibited, as in travelling dispensaries, on epidemic duties, Military Hospitals, Jails, Lunatic Asylums, Bacteriological Laboratories, etc., a compensation allowance of at least Rs. 50 per mensem be sanctioned.
- (c) That the house allowance be granted at a minimum rate of Rs. 20 except in special places when it should be Rs. 30 in Presidency Towns.
- (d) That a duty allowance of Rs. 3 per day, to those who are posted on 24 hours continuous duty.
- (e) That a conveyance allowance for persons in charge of travelling dispensaries and canal works at the rate of Rs. 50 per mensem.

For Burma these allowances should be double in all cases.

5. *Resolved* that this Conference requests the Provincial Governments to grant at least ten per cent of the posts of Assistant Surgeons to members of the Sub-Assistant Surgeons class who have put in ten years service.

6. *Resolved* that this Conference requests the Government that M. C. P. S., M. S. M. F., and persons who pass similar examinations should be at once appointed to the posts of Assistant Surgeons after their passing, irrespective of the reserved standard of proportion, kept for Sub-Assistant Surgeons for the grade.

7. *Resolved* that the Conference is sorry to note that for simple attendance in Medical Colleges and without any additional subjects for examinations, the Government should persist in making differentiations between Military Assistant Surgeons and Military Sub-Assistant Surgeons and again requests that both these classes should be placed on an equal footing at an early date.

8. *Resolved* that this Conference reminds the various Provincial Governments to amend their Medical Acts so as to give

due representation on their Medical Councils to members of the Sub-Assistant Surgeons' class in proportion to their number on their register, having regard to the fact that the medical graduates who are numerically less are given the right to elect more members than Sub-Assistant Surgeons.

9. *Resolved* that the Provincial Governments and Indian States should be reminded to abolish grade examinations and start post graduate courses for Sub-Assistant Surgeons at an early date.

10. *Resolved* that the education in Medical Schools being largely reserved for scholarship holders and stipend scholars and the restricted admission for private students, the present bond system of ten years becomes a compulsory condition for all youths taking the course of a medical school which is thus quite unfair and should be abolished at once.

11. *Resolved* that this Conference notes with great indignation the unbecoming and unwarranted language used by Licut. Col. Turner, Offg. Inspector General of Civil Hospitals U. P. in his address to the Agra Medical students regarding this Association.

12. *Resolved* that this Conference, while welcoming the proposal to establish additional Medical Colleges in the Provinces, strongly protests against the sacrifice of any of the existing well-equipped Medical Schools for University colleges.

13. *Resolved* that the Mysore Government be requested to have the Bangalore Medical School recognised for the examination purposes by the Government Board of Examiners, Madras or College of Physicians and Surgeons Bombay.

14. *Resolved* that the Government be requested to consider the change in the designation of Sub-Assistant Surgeons to that of Medical Officers.

15. *Resolved* that the following persons be elected as Office bearers for the year 1922.

(1) President, Dr. Joseph Benjamin, Ahmedabad.

(2) Vice President, Rai Sahib Dr. Khazan Chand, Kasauli, Punjab.

- (3) General Secretary Rai Bahadur Dr. Sarjoopershad, Indore.
- (4) Joint General Secretaries, 1. Dr. S. D. Gosavi, Indore.
2. Dr. N. S. Apte, Indore.
- (5) Treasurer, Dr. G. D. Khandekar, M. C. P. S., Indore.
- (6) Editor, Dr. D. V. Venkappa, Madras.
- (7) Co-Editors, Dr. J. H. Bhatt, Ahmedabad, Dr. Lekhraj Singh, Aligarh and Dr. Sharangpani, Indore.

FINANCE COMMITTEE.

Dr. Joseph Benjamin, Ahmedabad, Chairman.
Dr. C.T. Behrauwalla, Secretary.
Dr. Shanker Lal K. Vyas,
Dr. Dayabhoy Lallubhai
Dr. Dolatrai Dayabhai and Dr. J. H. Bhatt.

STANDING COMMITTEE.

- (1) All Ex-Presidents.
- (2) Dr. Joseph Benjamin, Ahmedabad.
- (3) „ K. G. Lohokare, Poona.
- (4) „ D. V. Venkappa, Madras.
- (5) „ G. D. Khandekar, Indore.
- (6) „ Lekhraj Singh, Aligarh.
- (7) Rai Bahadur Dr. Sarjoopershad, Indore.
- (8) Dr. S. G. Patwardhan, Indore.
- (9) „ Jamaitram B. Desai, Surat.
- (10) Rai Sahib Dr. Ramnarayanlal, Mussoorie.
- (11) Dr. R. M. Bose, Govt. House, Shillong.
- (12) Rai Sahib Dr. Khazan Chand Kasauli, the Punjab.
- (13) Dr. D.R. Srinivasa Iyer, Royapuram Hospital, Madras.
- (14) „ Y.M. Pradhan, Marine Lines War Hospital, Bombay.
- (15) „ K. N. Menon, Pasteur Institute Rangoon, Burma.
- (16) „ Abdul Sayed, 12, Lancers, C/O A.D.M.S., Karachi.
- (17) „ Kunj Beharilal, Meerut.

- (18) „ Subedar E. Bhogey Bahadur, I.M.D. Indian Station Hospital, Poona.
 (19) „ I. A. Solomon, Bharatpur.
 (20) Rai Sahib Dr. Hariram, Delhi.
 (21) „ Dibagh Rai, Jubbulpore.
 (22) „ D. Gopala Krishna Rao, Opposite Lady Minto Hospital, Shree Vankatsa Press, Bangalore City.

2. Resolved that the Provincial Secretaries should be proposed and selected this year by the branches of each province and the result intimated to the General Secretary within two months.

3. Resolved that the account-sheet for the year 1921 submitted by the Treasurer be adopted and be duly audited.

4. Resolved that the following members be appointed to propose rules and regulations of the Association.

- (1) Rai Bahadur Dr. Sarjoopershad, Indore, President.
 (2) Dr. C. K. Patel, Bombay Secretary.
 (3) „ Sarangpani, Indore City.
 (4) „ D. V. Venkappa, Madras.
 (5) „ D. Gopala Krishna Rao, Bangalore City.
 (6) „ Lekhraj Singh, Aligarh,

5. Resolved that the following Budget for 1922 be passed.

INCOME.		EXPENDITURE.	
	Rs. A. P.		Rs. A. P.
1. Subscription from members. Rs. ...	8,500-0-0	1. Printing and paper for the Journal ...	4,200-0-0
2. Advertisements ...	1,000-0-0	2. Establishment ...	1,600-0-0
3. Miscellaneous ...	800-0-0	3. House rent ...	360-0-0
		4. Stationery ...	250-0-0
		5. Furniture ...	50-0-0
		6. Other printing ...	300-0-0
		7. Travelling allowance ...	750-0-0
		8. Postage and Télégrams ...	1,550-0-0
		9. Miscellaneous ...	350-0-0
		10. Typewriter ...	540-0-0
Total Rs.	10,300-0-0	Total	9,950-0-0

6. Resolved that the discrepancies in Branch Accounts shown by the Treasurer, be recorded and after two months' period, the General Secretary and Treasurer be authorised to write off the amounts and start correct ledgers for future.

7. T. A. bill of Dr. Pradhan for Rs. 46-14-0 be paid as an exceptional case Dr. Joseph Benjamin be requested to withdraw his bill on account of the financial condition of the Association.

8. Resolved that the Conference records its thanks for the valuable work done by Dr. Varma in the cause of the Association.

THE FAMILY FUND.

ANNUAL REPORT.

MR. PRESIDENT, GENTLEMEN AND BROTHER SUB-ASSISTANT SURGEONS,

As hinted in his report, the General Secretary of our Association would naturally require me to inform our august body the doings of the Family Fund during the year under report. The Fund has now completed its 11th year, an age of activity and of the desire of educating its mind for a successful floating in this vast ocean of life. The Fund is indeed floating and doing a tolerably good work, though in still water as could be seen from the number of members joining the fund. The help or benefit given to the bereaved families of those of us who have died during the past years, distinctly indicates the attitude taken by our friends towards the sacred cause.

It is however, a matter of satisfaction that the Fund is doing its level best in discharging its duties. The juniors or the new generation of the Sub-Assistant Surgeons, as a class, so to say, are now responsible for a healthy, furthering of the cause of the Association and naturally of the Fund, its offshoot, started by the old generation and veterans of the class amongst whom, the late Mr. P. S. Ramchandrier our old and energetic General Secretary nay, the father of the Association, was at the topmost. We have

to-day assembled at his house and I don't think that he will be happy to 'earn the Fund, his tree withering with cold attitude and for a want of warm sunshine from our friends. The Directors have however suggested a few remedies to make the Fund more popular. Those remedies will be discussed in the Conference and after getting its approval will be brought into force. It is hoped, the new remedies will do some good to the Fund requesting the juniors to stick to the fundamental principle on which the Fund was started.

I have shown to you in detail the main spirit of the Association in starting the Fund and the various attitudes with which it is looked upon by certain members of our class. The Association is a fully responsible body and is at liberty to suggest changes or hand over the institution to any other energetic branch, who would expect to work it up with much better success.

The Association and the Fund are under a deep debt of gratitude to all the Administrative Medical officers, Surgeons General, and the Inspectors-General of Hospitals for not only the sympathetic view they take of the body but for the actual help they give in providing the Manager of the Fund with every information of the Sub-Assistant Surgeons under their respective control by sending him free of cost their periodical reports regarding their postings, new admissions etc.

During the year under report the Fund was worked on with a Board of Directors and Managing Committee with its head office at Indore. The Directors are :—

- (1) Dr. G. R. Tambe, M.A., B.Sc., L.M. & S. Private Practitioner, Nagpur.
- (2) Dr. S. N. Deo, L. M. & S., Custom, Commissioners, Indore.
- (3) Dr. B. M. Tambe, L.R.C.P. & S. Private Practitioner, Bombay.
- (4) Rai Bahadur Dr. Surjooprasad, Surgeon to H. H. Maharaja Holkar.

The Managing Committee consisted of Messrs. S.N. Sharanig-pani, B.Y. Kulkarni, S.N. Nivasarkar, Y.V. Bhide, S.D. Gosawi,

G.C. Karambelkar, the Presidents of Nagpur, Burma, and Punjab branches with Mr. V. G. Pantvaidya B. A. L. L. B. as Legal Adviser, the Bank of Bombay as Bankers and Mr. V.P. Mate as Auditor of the Fund.

In the year under report, Mr. S. G. Patwardhan worked as Manager and Mr. G. A. Deshpande as Secretary and Treasurer with Mr. M. R. Phadnis as Joint Secretary.

The Register of the members of Family Fund brings up a total of 602 to-day (13 being added in the year under report) out of whom 75 have died and 43 are removed from the list as delinquent members. You will find how it represents every part of India, British East Africa and Burma consisting of members of every caste and creed from the table below.

District	Number
Bombay...	140
Central India ...	118
Burmah ...	68
Madras ...	43
Central Provinces ...	58
United Provinces ...	32
Indian Army ...	38
Bengal ...	24
Assam ...	15
Rajputana ...	24
Mysore ...	24
British East Africa ...	5
Punjab ...	12
Mesopotamia ...	1
Total...	602

Nationality	Number.
Hindus ...	465
Mohamadans ...	77
Christians ...	56
Parsis ...	4
Total ...	602

Sex	Number.
Males	601
Female	1

Out of these 67 deaths have been already reported during the year 1919.

I am very sorry to note that during the year under report 8 more deaths have been reported. The following table will show you the details regarding the benefit we have been able to bestow upon the survivors:—

Call No.	Name.	Rs.	A.	P.
67	G. B. Naite died on 2-7-20	272	12	10
68	Gulam Mustafa died on 15-5-20	247	0	0
69	Elijah Abraham died on 2-11-21	228	0	0
70	Krishnaji Yeshvent Khoche died on 12-3-21	219	0	0
71	Kishorilal Thakurdas died 15-3-21	176	0	0
72	Popatlal Lallubhai died 6-6-21	166	0	0
73	Bimalchandra Bararji died 11-7-21	Under Collection		
74	John William died 11-8-21			
75	Mahamad Hussain died 23-8-21			
		1308	12	10
	Remaining part payment of calls from 60 to 66	274	9	8
	TOTAL...	1583	6	6

Out of the total members of 75 deaths the claims of 66 have been already paid before the end of 1920. During the year under report the claims of 6 S. A. Ss. were settled and paid. The total sum paid to the heirs of the members this year brings to Rs. 1583 as. 6 p. 6.

You are already aware of the last year's report that during the past 10 years 66 of your brethern had their fair share of the benefit of the Fund to their nominated heirs and survivors and the number during the year makes up a total of 72 whom the Fund has helped at a cost of Rs. 20,219-15-2.

The annexed statement will give an idea of the net income and expenditure together with the savings as reserved fund during the year under report. You will note from it that all attempts are made to minimise every expenditure.

STATEMENT OF ACCOUNTS FOR THE YEAR 1921.

INCOME.		EXPENDITURE.	
	Rs. A. P.		Rs. A. P.
1. Balance on 1st December ...	0-11-0	Payment of claims to the heirs of calls 67 to 72 ...	1583-6-6
2. By deposit to calls. 2087-0-0		Printing Charges ...	126-8-0
48 Rs. 1		Clerk's Pay ...	180-0-0
49 to 51 " 3		Postal Expenses ...	92-15-6
52 " 2		Travelling Expenses ...	45-8-6
53 to 54 " 6		Deposited in Postal Bank ...	455-13-6
55 to 59 " 19		" " Bombay Bank ...	870-9-8
60 " 6		Money Order Charges ...	7-0-0
61 to 62 " 27		Stationery ...	10-13-0
63 " 21		Paid to G. Secretary ...	6-0-0
64 " 42		Transferred from floating balance to the members ...	85-0-0
65 to 66 " 165		Cash on hand ...	141-15-6
67 " 151			
68 " 263			
69 to 70 " 485			
71 to 72 " 472			
73 to 75 " 424			
2087			
3. Membership fees ...	121-0-0		
4. Floating balance ...	90-0-0		
5. Certificate of F. F. ...	1-0-0		
6. Further calls ...	379-8-0		3605-10-2
7. Interest of postal Bank 1920 to 1921 ...	55-13-6	Brought forward ...	3685-10-2
8. " " Bombay Bank 1918 to 1921 ...	870-9-8	Deposited in Postal Bank ...	1341-13-7
		Deposited in Bombay Bank ...	8029-5-7
	3605-10-2		
9. Deposited in Bombay bank ...	8029-5-7		
10. " postal Bank ...	1341-13-7		
Total	12,976-13-4	Total ...	12,976-13-4

Now Gentlemen, you have so very kindly and patiently heard, how the sister institution of your Association, has served the philanthropic cause, with which object and principle the Family Fund was started by many of our worthies, most of whom I am sorry to note have joined the majority, though very luckily, you will find a few of them still surviving and cherishing the dear hope of inculcating the same spirit of philanthropy, amongst our younger brethren, who now ought to come forward to shoulder the responsibility of the sacred cause. The history and results of the Fund of the past decade, however is, it pains me to bring to your notice, much discouraging, though not quite disappointing.

The number of members is in no way improving and the plea put forward is very strange and not becoming our profession, the main basis of philanthropy. Some of us have become too materialistic to consider the Fund as a business and compare an early death or disability of a brother Sub-Assistant Surgeon with something very usual, not requiring a serious consideration, a sympathetic heart or a little self-sacrifice in his cause, whom we name as brother Sub-Assistant Surgeon. A few of us, highly idealistic, think this Fund, a beggar's hat, going round for collection but never giving it, a sacred and considerate view that those of us who have succeeded in their lives materially, have the opinion of devoting their own benefit amount to some public or charitable cause. The last section, but not the least, of our class, is the junior members; quite up-to-date, very business like, would not like to join the cause, but at the age of 35, as laid in the rules and even then, forgetting and showing an utter negligence. Friends, do you wish to see the plant of philanthropy uprooted, shaking and thus dying an untimely death when its shade is so very essentially required in these days of high prices and costly living. I certainly hope you would not. You see how the provident funds of the other sections of the servant classes are thriving and doing a lot of good to their members. Look at the Telegraph, Railway Anglo-Indian Association funds, not to speak the Medical Provident Societies of England and other civilized nations. They have all been standing on their own legs and why we should then be crippled and look for Government mercy at times, as we had had the occasion to do

when there was no such fund and it was then this tree was planted. The principle of the Fund, 'God helps those who help themselves' is followed and accepted by all God-loving people. I have every reason to believe that we are one of them. May I then, before resuming my seat request the elderly brethren of ours, to advise the youngsters to take advantage of the concession offered to them by the Fund and join it unanimously, and make the sacred cause a success in proffering help to those who need it, and receive the benefit if needed, or give it up to some charitable purposes, when by the grace of God, you are lucky to afford.

In conclusion, I shall fail in my duty if I omit my sincerest thanks to all the Directors, and our disinterested and honorary workers Messrs. Pant Vaidya, our Legal adviser, and V. P. Mate, our Auditor,

G. A. Deshpande, M. R. Fadnis, S. G. Patwardhan,
Secretary & Treasurer. Joint Secretary. Manager,

CORRESPONDENCE.

BURMA MEDICAL DEPARTMENT.

TO THE EDITOR OF THE *Indian Medical Journal*.

Sir,—A glance at the weekly issues of the Burma Gazette part IV shows that the number of transfers in the Medical Department is excessive for the small cadre of Assistant Surgeons and Sub-Assistant Surgeons in the service. From a close scrutiny of the whole situation it appears, that there is no system or any regulating principle involved in this most important distributive function. The interest of the profession, the usefulness of the medical man to the public and the justifiable nature of the expenditure from the allotted funds, are factors, which call for comment. Firstly, the interest of the profession suffers owing to irregularity in transfers—the posting of trained medical men in places where there is no specialised work to be done—

for instance the prevailing practice of deputing an Assistant or Sub-Assistant who had undergone training and service to remote areas like Tiddim, Maleik, and other small institutions—the posting of untrained and junior men to posts requiring special skill or previous apprenticeship, in Vaccine Institute, Lunatic Asylums, Jails, Pasteur Institute etc.,—the posting of capable men in unsuitable areas and retaining them too long, so as to fossilise their intelligence. In this and other similar ways, the medical profession and its popularity cannot rise to that high standard which is necessary for the public to reap the benefits of the science. Secondly the choice of a Doctor to give adequate confidence to the public, which devolves in the posting of a medical man sufficiently long enough in a locality and who is of suitable nationality, versed in the customs, manner and language of the population in his charge. When a new comer and a foreigner is posted to a place to treat through the medium of an interpreter the result is awkward indeed.

Thirdly, the question whether allotments contributed to the Medical Budget are spent in the best interests of the public attending the state-aided Institutions. In this connection, it may be affirmed without fear of challenge, that there are several Hospitals and Dispensaries doing very little work, worthy of the outlay for their upkeep. These institutions have just a few patients, who could be counted on one's fingers, for trivial complaints like, worms, colic, constipation, etc. It seems an anomaly to keep a Hospital with a doctor, compounder, ward servant, cook, waterman, sweeper etc., for the reception of a few patients, who are mostly helpless, destitute and homeless persons. Again the question of the medical men—the Civil Surgeons, Assistant Surgeons, and Sub-Assistant Surgeons—these are posted irrespective of the local requirements. For instance in a Hospital accommodating 50 to 60 beds there might be seen a retinue of servants and a goodly supply of doctors. It may surprise some to know that an Institution of forty to fifty beds is maintained with about fifty servants, housed and clothed in addition to pay. So there are absolute signs of extravagance and waste in the Department, calling for economy and efficiency. In these days of popular representation, the best

procedure would be to hold a public Conference on the lines of the Educational Conference and obtain the leading opinions from the facts elicited at a deliberation of the official and non-official medical men of all classes, private and public men of influence, and thus pave the way of bringing about, a thorough reorganisation of the whole Medical Department.

Yours, etc.,
'Fair play.'

FAMILY FUND CALL.

Calls Nos. 76 to 78.

Sir,

You are hereby requested to remit Rupees three only in favour of the marginally noted Sub-Assistant Surgeons as per rule 6 of the said Fund.

Membership Nos. 143, 348 & 51.

1. Dr. Ali Mahomed Hussein Bux died of Bright's disease on 13-11-1921. Hyderabad (Sind.)

2. Dr. M. Abdul Wahab Sahib, Bangalore died of pneumonia on 27-11-21.

3. Dr. Sheo Prasad, Indore, died of diabetes on 21-8-1921.
G. A. Deshpande, S. G. Patwardhan,

Secretary, Family Fund, Indore. Manager, Family Fund, Indore.

N. B.—On M. O. coupons please write No. of membership and clear signature and address.

NOTICE

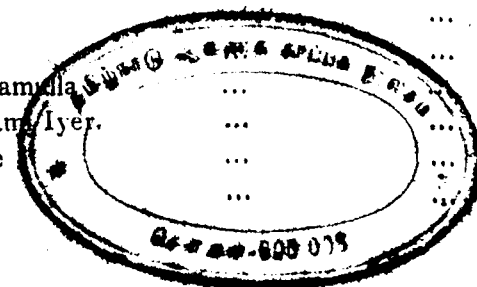
The fact the following members having not paid up their due calls was brought to the notice of the Directors long since, but the War Service and the sudden transfers of so many of the

members at distant parts in and out of India was a matter for consideration.

Those of the members who have not yet paid their calls, had a sufficient time till the end of the year 1921. The Directors have therefore authorised the Manager to strike the names of the following delinquent members from the list of the members of the Family Fund of the All India Sub-Assistant Surgeons' Association under rule 8 of the said Fund.

	From	To	Due
	Call	Call	Rs.
G. R. Erande	...	28	75 48
S. R. Samat	...	37	" 39
B. Y. Kulkarni	...	23	" 54
M. M. Kikau	...	53	" 24
Umasing R. Thakur	...	58	" 18
M. B. Deghe	...	55	" 21
Abdul Hoza	...	32	" 44
D. W. Marathe	...	29	" 47
N. B. Patel	...	54	" 22
S. T. Pradhan	...	54	" 22
Mahmed Hussein	...	31	" 45
V. B. Patil	...	42	" 34
W. R. Nargunde	...	60	" 16
M. Abdul Aziz	...	53	" 23
C. M. Amrutnatham	...	47	" 29
Shankarlal Nanumal	...	29	" 47
Laharsing	...	41	" 35
S. V. Subrayer	...	29	" 47
Girishchandra Das	...	48	" 28
F. R. Fadke	...	60	" 16
G. N. Vaidya	...	61	" 15
B. G. Lele	...	58	" 28
N. N. Das	...	55	" 21
Kalachku Vaghela	...	53	" 33
Jattanand Chabildas	...	63	" 11
Sunderlal Mulchand	...	61	" 15

	From	To	Due
	Call	Call	Rs.
R. S. Varvandiker	...	60	" 16
T. David	...	66	" 10
Kundamal Khemchand	...	63	" 13
M. P. Atwe	...	49	" 27
Hotchand Nanumlal	...	49	" 27
Durg Mahandas	...	46	" 30
Murlidhar Varma	...	55	" 21
Laxmi-Naryan	...	31	" 45
Nathumal Dube	...	33	" 43
D. R. Marathe	...	47	" 29
P. G. Pillai	...	61	" 15
A. L. David	...	37	" 39
M. N. Pillai	...	48	" 29
H. D. Morjani	...	48	" 28
G. Samuel	...	34	" 42
Russiddin Ahamed	...	34	" 42
A. M. Shah	...	27	" 49
M. V. Rangam	...	33	" 43
Sidhanathsing	...	64	" 11
Mahamad Umarchan	...	33	" 43
Harnath Mukerji	...	28	" 48
David Murray	...	37	" 39
P. S. Mudaliar	...	38	" 38
M. S. Pillai	...	53	75 23
D. Naryanswami Iyengar	...	36	" 40
Naryan Kaunji	...	56	" 20
Chotibai Kambli	...	24	" 52
H. N. Dube.	...	61	" 15
Z. D. Vyas	...	56	" 20
P. G. Parakh	...	41	" 35
V. G. Moghe	...	61	" 15
Mahamed Inamulla	...	55	" 11
A. Rangaswami Iyer.	...	52	" 24
M. P. Pendse	...	34	" 42
V. A. Joshi	...	28	" 48



the pay of the Sub-Assistant Surgeons, Col. Young traced in detail the origin of this class of medical subordinates and explained how far their status and pay have been improved in recent years. We have absolutely no quarrel with him on this score. We have ourselves admitted, times without number, that their pay and status have improved of late. But our only complaint is, and has always been, that they are neither commensurate with the needs of the situation nor are comparable to the conditions obtaining in regard to the other class of medical subordinates. We are perfectly aware that "our profession is to a great extent an altruistic one. We live and act for the interest of others, and our greatest aim should be to so equip ourselves as to best enable us to help the sick and suffering. No one who is not imbued with a great ideal of this spirit will ever make a good and successful physician or surgeon. This spirit, combined with diligence in the gathering of sound experience on top of a sound training is what makes for success in all respects in the medical profession." But, as rightly pointed out by the Minister in his speech "in these days when conditions of life have undergone such radical changes, when living is costly, when domestic and other obligations are numerous, one cannot reasonably expect you to be altogether philanthropic." It is exactly the reason why the Association has all along been consistently urging that the pay and status of the Sub-Assistant Surgeons should be improved to a reasonable degree, and that sound medical knowledge should be imparted to them by extending the course of training from four to five years with a view to enable them by dint of merit to reach the highest position in the ladder, without being dubbed a "Sub" all his life. Philanthropy can come in only when one is above all needs. A needy man is apt to be worried by domestic troubles that he will hardly have the time or the inclination to improve his knowledge of medicine which is so badly needed. We are unable to agree with the inference drawn

by Col. Young by a reference to the figures of admission to the Robertson Medical School that the terms of service have been appreciated of recent years. His own figures show conclusively that the profession is slowly but steadily losing attraction. While the number of applicants for stipends in the year 1913 had been 115, the same has dwindled into 63 in 1921, in spite of all the recent improvements. It proves conclusively, if proof were needed, that there is something rotten in the present system which has lost all charm among would-be applicants. The same is also the case in the other Provinces. The bond system by which the students are indentured to serve for a period of ten years after the completion of their training in the Medical Schools has virtually stood in the way of a large number of men enlisting themselves in this cadre of the medical service. Though the Minister for Local Self-Government in Madras insists and insists unnecessarily too for the continuance of this harsh system in the usual bureaucratic fashion, the Minister of the Central Provinces has appreciated the real cause of the objection and he has promised to examine this question again. Stipends, as he pointed out, might have been necessary in the beginning, but they are not necessary if the Medical Schools and the profession have grown as it is said, in popularity and attracted a number of boys in excess of the available accommodation or in excess of the prescribed number of stipends. He rightly pointed out, "if there was a larger demand for medical education it may be necessary to provide more accommodation, but with the growing demand for education it may be appropriate to put an end to the stipendiary system and substitute in lieu thereof scholarships to be awarded to the poor but deserving persons. This will surely obviate the necessity of taking bonds for service." This is exactly the position that we have consistently taken and we are glad that the Minister agrees with us in this

important matter. For the growth of an independent medical profession on which both Col. Young and the Minister laid so much stress, the first requisite is to do away with this cursed system of indenture, and we sincerely hope that the Minister, true to his words, will examine the question immediately and do away with this pernicious system and that the other provinces will also follow suit. Col. Young also made a brief reference to the demand of the Sub-Assistant Surgeons for promotion to the Assistant Surgeon's cadre. He said :—

"There are no doubt many who consider themselves worthy of this promotion, but you will admit that they are not always the best qualified to judge of their own fitness. It is necessary for me in my official capacity to be careful indeed in my choice, and you would not, I am sure, ask me to exercise my prerogative in this matter until I have had sufficient opportunities of knowing your capabilities. I trust that you will have confidence in me, and leave me to deal justly by you in this as in all matters which come within my official purview and that you will believe me when I say, that I have your interests at heart, and will always be ready to help in your interests as far as my duty to Government allows. Now, while this promotion is one of the desires which you as an Association have expressed, let me for a moment remind you of its effect. An Assistant Surgeon promoted from the Sub-Assistant Surgeon class has responsibilities not only to Government but also to the general public. His promotion is an empty thing if it confers only the privileges and does not also carry with it the responsibilities of such a promotion. If a Sub-Assistant Surgeon, by promotion, becomes an Assistant Surgeon, Government has the right to expect that he is both able and ready to carry out all the duties of his new rank. He becomes responsible for the professional care of a higher and better educated grade of Government servant, more is expected of him as a sanitarian, and he is expected to be a surgeon, able to undertake major operations at any moment. Has his past service as a Sub-Assistant Surgeon

qualified him to discharge these duties efficiently? Is he likely to profit quickly by the opportunities he now has of bringing himself up to the necessary standard? Has he shown any special aptitude for surgery? Has he taken any special interest in sanitary matters?"

Who is responsible for this state of things? Is it the Sub-Assistant Surgeon or the Government? If only the Government had paid heed to their demand for the increase in the course of training, all these questions would be better answered. But even as it is the Sub-Assistant Surgeons are doing all the work mentioned by Col. Young and are in no way inferior to their brethren, the Assistant Surgeons. The Government have also recognised this and have fixed a small percentage for promotion to the Assistant Surgeon's cadre. If only sufficient attention is bestowed for the equipment of the Sub-Assistant Surgeons with sound medical knowledge that they themselves ask for, a large number of Sub-Assistant Surgeons will be quite fit to compete with their brethren, the Assistant Surgeons.

One more point and we are done. The Minister said that the Association should lay down a definite programme of work for the development of science. It is one of the main objects of the Association and it is with this view that monthly meetings of the branches are held to discuss various matters of scientific importance. If only the branches regularly carry out this programme of work, there will be absolutely no justification for any such references, and we hope that the branches all over the country will pay special attention to this important aspect of the matter.

THE BENGAL IMMUNITY CO., LTD.

We heartily congratulate the organisers of this pioneer firm in India in the manufacture of biological products etc., for their successful preparation of antitoxins viz., anti-diphtheria serum, anti-streptococcus serum etc., holding authoritative certificates of test for the first time in the history of India.

A concern like the above was a desideratum in India in view of the fact that the most eminent bacteriologists and clinicians all over the world are quite emphatic regarding local manufacture of biological products from indigenous strains of micro-organisms as yielding the best results. The lapse of time that is inevitable between the date of manufacture of imported vaccines and the date of their actual use by the Indian practitioner, not to mention of their manufacture from foreign strains, must necessarily deteriorate their curative virtue in India, absolute freshness being an all-important consideration with biological products as well as solutions of hypodermic drugs.

We learn that this concern has availed themselves of the services of expert bacteriologists who have had training in the foremost biological laboratories in Europe and America; hence the quality of the products can safely be relied upon.

Biological therapy, one of the most rational systems of accessory treatment, has fallen into disrepute in the eyes of several medical men in India for two reasons mainly.—

- (1) Deterioration of foreign vaccines and sera used, either by the climatic conditions obtaining in India or by the incidence of time.
- (2) Ignorance on the part of the practitioner regarding control of doses.

We feel thankful to this firm for introducing to the profession biological products of maximum therapeutic

efficacy due to their freshness and polyvalency, manufacture from indigenous strains of pathogenic micro-organisms and dissemination of accurate information regarding control of doses with special reference to the constitutional idiosyncrasies of the indigenous population, through the medium of their publications from time to time.

We also learn that to-day very many eminent medical men in India are enthusiastically using them with uniformly gratifying results to the exclusion of all imported products.

We sincerely wish this Indian firm and its energetic and talented representative Mr. B. A. Row who was recently in our midst, all success.

We regret that owing to unavoidable circumstances we were not able to publish a running account of the Conference proceedings in this issue. We have, however, published some of the important speeches delivered and the papers read at the Conference along with the full text of the resolutions and the report of the General Secretary. We propose to give a connected narrative of the Conference proceedings and publish the remaining papers read at the Conference in our next issue, and we request our readers to kindly forgive us for a contingency for which we are not responsible.

The iron rule having failed as it would naturally fail the General Medical Council of Great Britain thought it fit to resort to the diplomatic way of satisfying the Indian public by special pleading, and sent a representative from England to place their case before the Indian public. Dr. Walker paid a visit to India and made a special plea before the members of the Imperial Legislatures and the medical profession at large for the betterment of the training in midwifery. We have absolutely no objection to improving the training in midwifery. Whatever might be the Curzonian

view of the status of India in the Commonwealth of Nations, for all constitutional purposes India is an original member of the League of Nations and is as much entitled to freedom of action as the Dominions possess and we cannot understand the audacity of the General Medical Council of Great Britain in dictating to the Indian public that which they dare not impose either in the United Kingdom or in the Dominions. Whatever that may be, the visit of Dr. Walker will, we are sure, disillusion the General Medical Council of Great Britain, and help them to take a sane view of things.

OSMANIA UNIVERSITY.

HYDERABAD-DECCAN.

WANTED competent medical men, with British or Indian University qualifications and possessing sound knowledge of Urdu to undertake translations of Medical books into Urdu for the proposed Medical Faculty of the Osmania University. Applications with full details, regarding qualifications, present salary, experience of teaching or translation work, references, etc., should be sent at the latest by the 27th April 1922 to the Registrar, Osmania University, Hyderabad. Applicants should state whether they are prepared to undertake the work at Hyderabad as whole-time translators, or on piece-work outside Hyderabad, stating also the salary or remuneration required. Authors of published works can also communicate with the undersigned if they desire to have their works revised and published by the University.

H. A. ANSARI,

Registrar, Osmania University.

NOTICE TO MEMBERS.

"The annual subscription for the year 1922 will shortly be recovered by sending V. P. cards for Rs. four and annas four. Those who want to save these V. P. charges should send Rs. four only to the undersigned at an early date, with their roll numbers and legible addresses on the money order coupon."

King Edward Hospital,
Indore Residency,
27th January 1922.

G. D. Khandekar, M.C.P.S.,
Hony. Treasurer,
The All India S. A. S. Association.

THE Indian Medical Journal

Vol. XVI]

APRIL, 1922.

[No. 4

ORIGINAL ARTICLES.

TREATMENT OF SEPTIC WOUNDS WITH EUSOL

BY

DR. CHHABIL DAS, M. P. L.,

Pasteur Institute of India, Kasauli.

MY professional friends who have served in the military department during the Great War, whether in India or beyond the Seas, must have heard about Eusol, if they have not themselves used this solution. This solution was devised by Professor Lorrain Smith, Edinburgh University, hence the name E. U. Sol (Edinburgh University Solution). Sometime in 1916, a circular was issued from the military medical authorities setting forth its uses and the method of preparation. This circular went to all the military hospitals in India. The great reputation of Eusol in the treatment of septic wounds in the different theatres of war influenced the writer as it must have influenced many others, to try it. The writer employed this solution for very nearly two years in treating wounds which were not very septic—in peace stations one does not often come across very septic wounds—; but he found to his great disappointment that Eusol was not even worth the trouble of its preparation as compared with other antiseptics. Possibly others who have tried it in India have met with similar results. The prescription given in that circular letter was as follows:—

Take 7 drachms each of bleaching powder and boric acid, put them in a stoppered bottle, shake them thoroughly with two pints of boiled water, keep the solution over-night and filter it the following morning.

The bleaching powder came from the Medical Stores; though supplied in stoppered jars, it had only a very faint smell of chlorine which is the active agent in the salt. Even the smell might be lost after two or three brief exposures to the air. This bad impression of the solution remained till early this year when my services were transferred to the Pasteur Institute of India at Kasauli. At this Institute one has to deal with very septic wounds caused by the bites not only of dogs but of jackals, wolves and sometimes of panthers. At first the writer treated such cases with solutions of carbolic or perchloride of mercury, when our Director, Major J. Morrison, I.M.S., suggested the use of Eusol in such cases. Having past experience still fresh in my mind, I did not like the idea and related to him my whole story. Upon this he very kindly remarked that unless bleaching powder of the proper strength is available, which is practically impossible in this country, Eusol prepared by the above method is worse than useless as a germ-deterrent. Most, if not the whole, of chlorine in the bleaching powder is lost during the transit from Europe to India or storage in India. He then very kindly dictated to me his own prescription for this solution and showed me the whole process of standardising bleach solution. The prescription as dictated by him consists of the following:—

Stock Solution "A".

Boric Acid 6 ozs.

Clean Water (Preferably boiled) ... 2 gls.

Stock Solution "B".

Standardised bleach solution... (1.3 to 1.35 per cent available chlorine.) 1 gl.

Keep in stoppered jars or in bottles in a dark place. For use, add one part of solution "B" to two parts of "A". This brings Chlorine in the solution to just over 4% the correct strength for Eusol. Stock solutions if kept as directed will practically remain

unaltered for several months. Solution "B" should, however, be retested after some time. (The method of standardising bleach solution, the apparatus and reagents required, are given in the Appendix to this paper).

During the last nine months at this Institute, I have had the opportunity of treating very nearly three thousand septic wounds, varying in degrees from ordinary suppurating wounds to septic gangrenes, in which the whole limb was very much swollen, with dusky purplish colour of the skin, surface covered with extensive sloughs, in some cases, even blebs containing sticking dark coloured serum. The effect of Eusol in such cases was simply astonishing. In very bad cases, within a week, the swelling was reduced to almost nil, sloughs separated and were replaced by granulation tissue, and the shape of the limb was restored practically to normal. In other cases it retarded at once the ensuing inflammatory phenomena.

The best and the most efficacious way of applying Eusol in very septic cases is by means of the drip method. The apparatus devised by the writer at this Institute for treating such cases consisted of a glass jar with two openings one at the top and the other at the side near the bottom the latter fitted with a rubber cork having a hole through which passing a glass tubing bent at right angles and the distal end of which previously drawn over the flame into a fine tube. It served our purpose beautifully well. The jar filled with the solution rested on a stand or on a table by the side of the patients bed and the solution was allowed to drop on the wounds in a fine continuous flow for three or four hours. The wounds being covered with a layer of gauze or lint, and strips of gauze being placed so as to drain all cavities. In ordinary septic wounds two or three layers of lint, cut according to the size of the wounds and soaked in the solution, were kept wet on the wound by covering with a larger piece of waterproof or guttapercha tissue and a bandage. The dressings were changed at least once a day.

In the end I would add that besides the above said valuable properties of this solution and the cheapness with which it can be had it has the following advantages on other anti-septics:—

1. It is non-irritant because the caustic alkali in the bleaching powder has been neutralised by the boric acid.

2. It does not coagulate the albuminous substances like mercurial salts and therefore does not give any shelter to the germs.

3. Unlike the action of carbolic acid the parts kept wet with this solution are not likely to become necrosed.

In view of all these facts the writer urges on every medical man who is running a dispensary, whether private or public, to undertake the preparation of this solution himself. The method of standardisation is very simple. The apparatus required is not expensive nor elaborate. The medical officers in the district hospitals can easily standardise this solution and supply outlying dispensaries in a more concentrated form with instructions to dilute it with water to the required strength before mixing it with boric lotion.

Lastly the solution of bleaching powder recommended (1.3 per cent) is such that it can be used for the sterilisation of drinking water, in epidemics of cholera. The dose necessary for an ordinary well or river water is one ounce of the solution to one hundred gallons of water.

Note—The automatic flushing and refilling bottles devised by Captain Lyn Dimond R.A.M.C., and Captain Robert McQueen, R.A.M.C., are very suitable in the drip method because of their being obtainable at a minimum cost and involving the least amount of labour in carrying out this treatment on a large scale. For details, please refer to their article headed "The Carrel-Dakin treatment and a method for its application on an extensive scale", in the British Medical Journal, of 22nd September, 1917, (page 387).

Standardisation of Bleach Solution.

Apparatus & Reagents required :—

Apparatus.

1. A small flask or wide mouthed bottle.
2. A 10 C. C. graduated pipette.
3. A 50 C. C. " burette with stand.

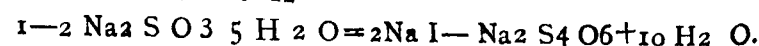
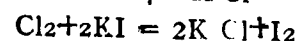
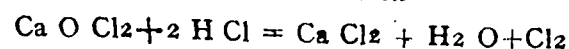
Reagents.

1. Normal solution of Sodium Hyposulphate or Hyposulphite of soda (Photographic Hypo). To prepare N solution take 248 grammes (the atomic weight) of the salt and dissolve it in 1000 C. Cs. of water. To prepare N/7 solution you take therefore $248/7.1$ or 34.9 grammes and dissolve it in 1000 C. Cs. of water. If metric measures are not available this solution is made by dissolving $15\frac{1}{2}$ grains of hyposulphite of soda in one ounce of water—a number readily remembered. Preserve it in a stoppered bottle and keep in dark. Make fresh every fortnight.
2. 25 per cent solution of hydrochloric acid.
3. 10 per cent. solution of pot. iodide.
4. 1 per cent. freshly prepared starch solution. Starch is dissolved in cold water and is then heated to boiling. Borax at the rate of 4 per cent can be added to the solution. This keeps it alright for sometime.

Process.

1. Take a certain amount of bleaching powder, say one lb and dissolve it, by stirring well, in one gallon of water.
2. Fill the burette with N/7.1 Hypo to zero.
3. Take 5. C. Cs. of bleach solution in the small wide mouthed bottle.
4. Add to it 3 C. Cs. or 50 minims of 25 per cent. Hydrochloric acid, when by the action of acid on bleach solution Chlorine is liberated. Then add 7 C. Cs. or 2 drachms of 10 per cent. Pot. Iodide, and the free Chlorine sets free Iodine. It is best to mix Hydrochloric acid and Pot. Iodide and add them together.
5. From the burette run in the Hypo slowly, shaking meanwhile, till the brown colour of the liquid in the bottle becomes straw coloured.
6. Add a few drops of 1 per cent. starch solution. A blue colour is produced.

7. Continue adding the drop by Hypo drop till this colour disappears.
8. Read off the number of C. Cs. of Hypo used in the burette. Divide this number by 10 and the result is the percentage of available chlorine in the Bleach Solution.

Formulae*Calculation.*

From the formula it appears that 248 grammes (the atomic weight) of Hypo corresponds to 35.5 grammes (the atomic weight) of Chlorine; therefore 248/7.1 grammes of Hypo will correspond to 5 grammes of Chlorine.

In a list if 13 C. Cs. of Hypo solution have been made then 1000 C. Cs. of N/7.1 Hypo corresponds to 5 grammes of Chlorine

∴ 1 " " " " " " .005 " "
If 1 C. C. of Hypo is equivalent to .005 grammes of Chlorine what is the percentage of available Chlorine in the Bleach Solution?

1 C. C. is equivalent to .005 Gms in 5 C. C. Bleach Solution.

13 " " .065 " " " " "

13 " " 1.30 " " 100 C.C. "

∴ 1.3 is the percentage of available Chlorine in the Bleach Solution used.

If the Solution is stronger than 1.3 per cent it may be diluted to 1.3 per cent thus:—

Supposing the Solution is 2.2 per cent. take 13 parts of the Bleach Solution and add water upto 22 parts.

If the Solution is weaker than 1.3 per cent. the proportionate amount of Bleaching Powder required may be added to the original solution.

STETHOSCOPY; SOME DIFFICULTIES ATTENDING PHYSICAL DIAGNOSIS IN DISEASES OF THE CHEST

BY

K. S. RANGANATHAN L. M. P.

Much has been told in testimony to the merits of the stethoscope; regarding its utility, and the methods of its application. But the difficulties and fallacies attending its use have not been published. The results of this exclusive advocacy have been to place the stethoscope and its pretensions in a false position; to awaken in the minds of many a sense of infallibility; to lead the profession and the public to expect too much and in the end blame the stethoscope for the errors of the stethoscopist. The enthusiasm and rashness of the exclusive stethoscopist retard the adoption of the claims of physical diagnosis. He seems to look upon the instrument as all-sufficient; he rushes at once to percussion and auscultation and neglects to make those careful and minute enquiries which are so necessary for a correct diagnosis. He thereby converts an invaluable auxiliary into what, in his own hands, proves but an imperfect and treacherous substitute.

Unfortunately, in the medical profession, all truly valuable and practicable knowledge is only to be attained by a proportionate sacrifice of time and labour. Physical diagnosis is obedient to this law. Perfect mastery over stethoscopy would be a great acquisition. But the truth unfortunately is that, even moderate proficiency in the use of the stethoscope is more rarely achieved than many of us are willing to admit.

It may even be affirmed that the student who attempts to acquire such a proficiency from a perusal of books and attendance upon patients in the wards, will, if he solely depended upon his own efforts, unaided by an experienced guide, most surely fail in his object. Because, it can hardly be expected that the student, a novice in the art of physical diagnosis, could, without the aid of an interpreter, attach a correct idea to every term used to express the various phenomena elicited by percussion and auscultation. He will, on the other hand, store his mind with false

knowledge and with what reward? Disappointment and loss of professional fame.

It was alleged in the case of Laennec that he was a self-made physician and that it was he who contributed more towards the advancement of the medical art than any other single individual. But to quote the words of Dr. Addison himself, "the fine genius, the indefatigable industry, and vast opportunities of Laennec do not fall to the lot of many, and his case can only be regarded as a very rare exception to the general rule."

So much for the student. How does the practitioner fare? Having unfortunately neglected the cultivation of physical diagnosis, he has nevertheless already entered upon the duties of the profession. He is driven by necessity or pride to rely upon his own resources, and is seldom successful if the advantages of a big hospital are refused to him.

To enumerate a few of the fallacies attending on the physical diagnosis in diseases of the chest:—

1. It is well known that many persons while under examination fail to perform the respiratory act efficiently, either from nervousness or from a mistake as to the correct way of doing it; they merely have the chest up and down instead of freely inhaling and exhaling the air. This may lead to an erroneous belief that the respiratory murmur is deficient, even whilst the lungs are perfectly healthy.

This source of fallacy is corrected by asking the patient to cough, instantly afterwards to inspire forcibly in order to cough again, and so on.

2. When acute disease of the lungs occurs in persons with rickety deformity, the violence of the symptoms is said to be quite disproportionate to the extent and severity of the pulmonary disease.

This may suggest unnecessarily active treatment.

3. When the bronchi opening into a phthisical cavity are temporarily blocked up by secretion, auscultation may fail to detect that cavity, especially if the patient breathe but moderately.

In every case of suspected phthisis, therefore, we ought to make the patient breathe and cough with violence and repeat it while auscultating.

4. A person may have a violent, tearing cough, lasting for weeks or months, attended with slight mucous expectoration, occasionally even streaked with blood, and causing pain to be felt throughout the chest, as well as an appearance of general constitutional distress, whilst neither percussion nor auscultation may reveal any abnormality within the chest.

This is often due to a relaxed uvula, in either sex; or if the patient is a female, it may also be due to hysterical irritation.

5. When pneumonia occurs in its simplest form—that is with little or no bronchial complication—there may be no cough and consequently no expectoration.

Such a case is easily mistaken for a common continued fever and treated as such.

6. When the anterior and inferior portion of the left lung be consolidated by pneumonia, percussion may produce good resonance, owing to the proximity of the flatulent stomach.

7. We may be called to see a case of pleurisy before a single physical sign has developed.

This is a common source of mistake and it may be doubtful whether the pain arises from pleurisy, rheumatism or neuralgia.

8. When the effusion into the pleural cavity is of a purely serous nature, the fluid may gravitate to the floor of the cavity and unless abundant, may escape detection by percussion or auscultation. Percussion proves fallacious in such a case in consequence of the presence of the liver on the right, and the inflated stomach on the left side.

9. Physical examination, in many instances will not enable us to analyse the condition of the heart, when that organ continues to be over-charged with blood.

Hence the prudent rule, always to wait a certain time before giving a positive opinion.

In publishing the above I do not for an instant presume to suppose that some of the difficulties that I have myself come across, will have proved equally embarrassing to others.

In concluding, I sincerely hope that it will be the earnest endeavour of those that are responsible for the clinical instruction of students, to strip the stethoscope of its pretensions, to impress upon them the manifold difficulties met with in its use, and to state fairly what it will not do, as well as what it will do. For by doing so, besides *not* turning out bigotted stethoscopists, they render the stethoscope itself some service.

ELECTRICITY IN MEDICAL PRACTICE

BY

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What is Electricity:—

Electricity is a physical force, indeed a natural condition, which exists in great abundance every where and which is believed to be absolutely essential to existence of matter, in any state, either animate or inanimate. As in the case of the other natural forces, exact definition is difficult. Perhaps the best definition, in the present state of our knowledge, is to say that Electricity is the result of ether waves, caused by the passage of electrons from one substance to another substance, which has a positive charge. Whatever doubts may exist as to the exact nature of electricity, there are no doubts as to the definite laws, which control its production and distribution. Currents can be started at any time; conveyed to any place, high or low, in any desired quantity, and completely controlled at all times, and under all circumstances.

For purposes of description electricity is some times subdivided into:—

(a) Static electricity; or electricity at rest. This form of electricity can be obtained by rubbing certain non-conducting

substances together notably "Electron" or amber and silk. The characteristic of this form of electricity is that it is always in a state of great tension; while its quantity is small.

This kind of electricity is sometimes used in medical practice for the treatment of many diseases. The machine, used for the production of this form of electricity, is "Weimshurst Machine."

(b) Magnetism or electricity in rotation.

(c) Galvanic or current electricity, *i. e.*, electricity in locomotion. In medical works the expression Galvanism is understood to mean a continuous current of electricity applied for medical purposes and obtained from primary or secondary cells or from a suitably controlled main continuous supply. This form of electricity is essential for X Ray work and for some electrical treatment.

In 1831 Faraday discovered a new form of current electricity which he generated by means of magnet and of conductors already carrying electrical currents. This variety is termed induced electricity or Faradism.

The expression Faradism, implies the interrupted high tension current, induced in the secondary winding of a small medical induction coil.

(b) Radiant electricity or electricity in vibration; variety employed in wireless Telegraphy, in high frequency discharges and diathermic currents.

All forms of electricity are, however mutually interchangeable.

Now I shall deal the *Physiological* and *General* therapeutic considerations in short:—

(1) *Physiological considerations:—*Electrolytic—conduction—Ionic Medication—Cataphoresis—The resistance of the body—Diffusion of current in the body. The capacity of the body—The action of electrical currents on living tissue—condenser discharges—The Motor nerves and muscles—unstriated muscle—Electricity as a test of death—Sensory Nerves—The Brain—Lethal effects.

(a) Conduction of Electricity by the tissues:—

All of you are aware that the body is as an electrolytic conductor and the terms used in considering the portion of a circuit in which electrolytic conduction is taking place. When a battery or other source of direct current is connected to a patient by means of the usual moistened pads, a current flows through the circuit because the wires, the moist pads and the body are conductors. The mechanism, however, of the conduction in the non-metallic parts of the circuit is not the same as that which holds good for the wires.

Conduction in watery solutions of salts (and the tissues of the body come into this category) takes place only by the conveyance and transport of charged particles or 'ions' through the solution, and without this movement of material particles there is no conduction in solutions. The moving particles or ions are the result of the dissociation of the molecules of salt by the process of solution, so that a solution of Sodium Chloride in water contains abundance of dissociated ions of chlorine carrying negative charges and of sodium carrying positive.

When a current is applied there is a double movement among these ions all along the line joining the metallic Electrodes—a procession of the chlorine ions towards the positive pole and of the sodium ions towards the negative, every ion carrying its appropriate positive or negative charges so that the measurement of the current by a galvanometer in the circuit gives an accurate indication of the amount of movement of the chlorine ions towards the anode and of sodium ions towards the kathode.

This electrolytic conduction by ionic movement takes place in the body when a current is applied to it and, indeed, the current is nothing else but a movement of ions taking place in an electrolyte consisting of the fluid of the body which contains an abundance of saline constituents—mainly chlorine of sodium,—but also containing phosphates, sulphates, potassium and calcium, etc.

When the current is applied in the usual manner by means of metallic electrodes covered with layers of moistened material, the ionic movement takes place both in the saline solutions of the moist pads and in the juices of the body, and conse-

quently there is an interchange of ions at the junction of the pads and skin, the ions of the pad moving inwards into the skin, and the ions of the body moving outwards into the pads so that pads moistened with salt solution (NaCl) there will be an entry of chlorine ions from the negative pad and also an exit of chlorine ions under the positive electrode and of sodium ions under the negative. It can readily be shown with Litmus-paper that the positive pad become acid, and the negative pad alkaline. This ionic movement has been very well illustrated by Leduc and I ask you to read his works.

(b) *Ionic Medication*:—Excepting High Frequency all effects of currents upon the body are effects of ionic movement but the term "Ionic Medication" is applied to treatment in which currents are used to produce chemical changes in the region to which the electrode or electrodes are applied. Surgical electrolysis is a form of ionic medication and the introduction of drug through the skin from electrodes moistened with them is becoming more and more recognised as valuable medical procedure. Ionic medication is more complicated than the administration of a drug by hypodermic injection but it has an advantage which that method does not possess. A hypodermic injection passes into the interstices and lymph spaces, but the ionic movement affects the composition of every cell through which the current penetrates.

For ionic medication metals, alkalies, alkaloids and other bases are used.

Leduc (British Medical Journal, September, 14, 1907) has pointed out that with unattackable electrodes, ions are formed at the surfaces of the metal from the electrolyte (viz. Hydrogen at the anode and hydroxyl at the kathode) and that these migrate inwards, and in time reach the skin, where they produce caustic effects.

Edison, in 1890, suggested electrolysis for the introduction of Lithium into gouty tissues, and Bordier repeated these experiments using as electrode a bath containing a solution of Lithium and made a series of applications to a patient with large gouty deposits in the hands. He was not only able to demonstrate the presence of

lithium in the patient's urine but he detected the presence of uric acid in the liquid of the arm baths, thus proving both the introduction of the kathion lithium and the extraction of the anion uric acid at one operation. There was also a marked chance for the better in the condition of the patient's gouty deposits as a result of the experiments.

(c) *Cataphoresis*:—This term is used to signify a movement akin to osmosis, which has been observed in liquids submitted to the action of electrical currents. Usually it takes the form of a flow from the anode to the kathode, and fluid can in this way be made to pass through porous diaphragms or membranes against the force of gravity. It has been utilised as a means of introducing drugs through skin, and formerly was confounded with tonic medication. It is not impossible that cataphoresis may play a minor part in the conveyance of drugs into the system, when the procedure of ionic medication is being employed. If electrodes be applied to a conducting block of Gelatine and a current passed, it is seen after a time that the Gelatine under the anode has become drier than before, and the Gelatine under the kathode moister. This is partly, if not entirely, an effect of the cataphoric movement of fluid from the anode and to the kathode.

(d) *The Resistance of the body*:—The resistance of a patient's body is mainly a question of the thickness and dryness of the epidermis. It is much higher for the palms of the hands and the soles of the feet than for other parts.

The resistance of women patients is greater than that of male patients. This has been measured by Professor G. Weiss. He said that it was probably due to the smaller surface of the hands of the women or perhaps to a lesser number of sweat glands and hair follicles.

Very high resistances may be observed in hospital patients who have been long confined to bed as their epidermis is not shed so freely as it is in persons leading an active existence.

Low resistances have been observed in Graves' Disease in which the skin is usually moist and high resistances in Hysteria, in Melancholia, and in paralysed parts, in which it is dry.

The medical practitioner is concerned with the resistance of the body mainly as it affects the question of treatment, and the number of cells required to drive the proper current through the patient. Under conditions of medical practice, and using salt water to moisten the skin and electrodes, the resistance of the body, with electrodes of an area of a few square inches, ranges about 1,000 or 2,000 Ohms—that is to say an electro motive force of 12 Volts, will pass a current of between 6 and 12 milliamperes.

During the progress of treatment the electro-motive force in circuit which is employed at the commencement must be reduced gradually to compensate for the fall in resistance which takes place as the skin becomes penetrated by ions; if this is not attended to, the current may become larger than it is intended to be.

(5) *Diffusion of Current in the body*:—When a current is led into a broad conductor, the lines of flow spread out through the conductor. The current which passes across the unit of sectional area taken at right angles to the lines of flow at the point may be called the density of the current at that point.

In a conductor like human body it may be necessary to take into consideration the density of current at any particular point because the physiological effects are partly dependent upon the density.

The path of a current between two electrodes placed upon the body surface is not to be marked out simply by drawing a straight line from the one to the other, for the whole of the conducting tissues between the electrodes help to provide a passage for the current which spreads out from beneath the positive electrode, becoming less and less dense, as it occupies a wider and wider sectional area of the conductor and again grows denser as its lines of passage become once more gathered together to reach the negative electrode. The size of the electrodes is of importance in treatment, for at the surface of contact of a small electrode, the density current per unit of surface, when a definite quantity of current is, of flowing, will be greater than when large electrodes are used.

(6) *The Capacity of the Body*:—The influence of the capacity of the body in high frequency work is well illustrated by the following experiment:—4 persons hand in hand, were connected to one Pole of a High frequency apparatus, and the current measured between the Pole of the apparatus and the first subject gave a current of 151 milliamperes; between the first and second current was 132; and between second and third 128 milliamperes.

(7) *Motor Nerves and Muscles*:—The behaviour of nerve and muscle to electrical stimulation under conditions of experiment with dissected tissues is dealt with in works of Physiology. The stimulating effect of electrical currents is undoubtedly due to the displacement of ions in the nerve or muscle, and the more sudden the displacement the more stimulating is the effect.

The contractions are seen only at the make and break, that is to say, only at the moments of sudden alterations of Potential.

It has been shown by Dr. Ludwig Mann of Breslau that the nerves of infants and young children require currents of considerably greater magnitude to provoke contraction in their muscles.

Mille J. Ioteyko in her researches has shown by assuming that all muscles contain two kinds of material, the striated portion and the sarcoplasm; that both of these elements are contractile, but in different degrees, the former being capable of responding to brief stimuli of longer duration and contracting slowly. In different types of muscle the relative amounts of each component are different, and different muscles therefore contract at different rates.

(8) *Interrupted Currents*:—If the makes and breaks of a battery current follow one another in rapid succession, the rapidly succeeding change of potential cause the muscle to pass into a state of tetanus or permanent contraction. To produce their effect the individual shocks must succeed one another, at the rate of two per second or upwards.

As the discharge from an induction coil consists of a series of impulses or waves of current occurring about 50 times a second, it is reasonable to expect that their effect upon a motor nerve would be to throw the muscles into a tetanic contraction, and that is what is observed.

In practical electrical testing it is usual to apply the electrodes to the muscles directly at their motor points. The individual behaviour of the muscles is more clearly seen by this method than if they may be thrown into contraction in groups, as generally happens with stimuli applied to a nerve trunk which supplies a number of separate muscles.

The study of the effect of electrical stimuli upon nerve and muscle has been complicated by the adoption of the induction coil as the usual source of interrupted currents. Induction coil discharges are impulses of irregular form and variable duration and are by no means the instantaneous discharges which they have been too commonly assumed to be. In recent years the exact character of the electrical stimuli used in electrical testing and treatment has attracted much attention by the invention of condenser discharges.

(9) *Condenser discharges*:—Condenser.—An apparatus consisting of two insulated conductors each presenting a large surface to the other with a small distance between them is called a condenser, because when one conductor is connected to earth a small electromotive force is able to charge the other with a much larger quantity of electricity than if it stood alone—i.e., capacity is increased by the proximity of the other conductor.

Condenser discharges provide excellent stimuli for nerve and muscle. Bodet de Paris in 1888, advocated their employment and in his book points out that condenser discharges cause little or no fatigue in muscle and very little pain. Dubois in considering the behaviour of muscle and nerve to condenser discharge, showed that, as the charging potential is increased, the required capacity of the condenser decreases rapidly.

In man a minimum potential of about 12 volts is necessary, because discharges at lower potentials are ineffective, whatever the capacity of the condenser.

Condenser discharges have the advantage that a known capacity, when charged to a known voltage, contains a known quantity of electricity and discharges this in a regular manner. With condenser discharges the resistance is of importance and it is the factor which determines both the initial magnitude of the discharge and its duration.

(10) *Electricity as a Test of Death*:—The electrical reactions of muscle afford a complete test of death, as the contractibility of the muscles only persists for a short time after death, and then disappears gradually.

(11) *Unstriated Muscle*:—The behaviour of unstriated muscle differs from that of striped, in that, its latent period is much longer, and the rate of contraction is also longer. When the muscular coat of the intestine is stimulated, it may contract locally and remain contracted for a time or waves of peristaltic contraction may start from the point stimulated and travel slowly towards the remoter parts of the bowel. Unstriated muscle responds feebly to interrupted currents of brief duration, and the most effective means for setting up contractions in an organ containing unstriated muscle is to use the battony current, rhythmically interrupted at a slow rate.

(12) *Heart Muscle*:—The habits of heart muscle are peculiar in their highly developed tendency to rhythmic contractions. Electric stimulation tends to strengthen the action of heart muscle if it be timed to suit the natural rate of the rhythm. If the stimulation does not quite keep time with the heart beat, it may effect a gradual change in its rate until the heart may be brought to beat in time with the rate of the stimulation. If the stimulation be quite out of step with the rhythm of heart it will tend to embarrass its actions.

A weak continuous current or a smooth unbroken succession of weak induction coil shocks may strengthen or accelerate the beat of the heart. Strong continuous currents destroy rhythm of the heart, and cause it to stop in diastole, and a succession of strong shocks from an induction coil does the same. The useful employment of electricity to strengthen a heart which has suddenly

developed signs of failure is very difficult and requires more careful application and there is risk of doing the patient more harm than good by injudicious applications.

Dr. Hampson (in the Proceedings of the Royal Society of Medicine Vol. V, 1912—Electro-therapeutical section, P. 119) has recently shown that rhythmic contractions set up in the large muscular masses of the limbs or trunk will modify the rate of heart, if the rhythm be arranged to be a little slower or a little faster than that at which the heart is beating. The effect is to propel blood from the muscles during the periods of muscular contraction, and this rhythmic propulsion of blood along the veins to the heart gradually influences heart to keep time with the venous pulse so set up. This action of rhythmic contraction is to provide a sort of auxiliary heart mechanism, and it has proved useful in treatment.

(13) *Sensory Nerves*:—The stimulation of sensory nerve endings or nerve trunks by electrical currents produces sensations. In the case of direct currents sensation of shock is felt when the current is closed and opened; but there is also a stinging sensation during the whole time of the passage of the current unless this be very weak. This stinging sensation is undoubtedly due to the ionic movement set up in the cutaneous sensory nerve endings. It varies with the constitutions of the saline solution with which the electrodes are moistened; for instance, if these electrodes are moistened with sodium carbonate, the stinging sensation is severe at the negative pole where CO_3 ions are penetrating, if Sodium Chloride be the medium, the sensation is felt most at the positive pole where the sodium ions are entering. Chlorine ions cause relatively less sensation, and that is also the case with ammonium ions. Ammonium chloride is a very good salt to use in solution for moistening electrodes.

A very complete account of the sensations which accompany the introduction of various ions is given by Dr. Sanchey in his essay on Ionisation ("La Theorie des ions en Electricite Medicale," A. Dugas et Cie, Nantes, 1902.)

With rapid vibrations of one hundred per second and upwards a benumbing effect becomes noticeable, and this is best felt

If the electrode be applied to a point upon the trunk of a cutaneous sensory nerve. With a small displacement of the electrode away from the nerve trunk the numb feeling may disappear. It affects the area of distribution of the sensory nerve, and is a true anesthesia, both tactile sensations and the perception of painful impressions being greatly blunted while the current is passing, and a glow accompanied by perspiration often succeeds when the current is cut off. This procedure has been used to produce local anesthesia for minor operations on the extremities.

(14) *Nerve of Special Sense*:—The nerves of special sense respond to electrical stimulation by their own special sensations; thus stimulation of olfactory nerve endings is said to produce a swell "like Phosphorus"; stimulation of the auditory nerve endings gives rise to the perception of a sound, stimulation of the semi circular canals produces vertigo and stimulation of the retina produces the impression of a flash of light. The retina may be stimulated with one Pole at the nape of the neck, and the other over the closed eyelid. In making experiments on the eye, one may well bear in mind the accident which befel Ducheune, who apparently caused serious damage to the vision of a patient when applying a current to his face. The effect may have been a retinal hæmorrhage caused in some way by the electrical application.

The gustatory nerves react to currents by a sensation of taste, often described as an acid or metallic sensation.

(15) *The Brain*:—Many experiments have been made by many observers but without definite success. Experimental Physiologists have made much use of electrical stimuli in determining the situation of motor centres in the exposed cerebral cortex: In ordinary electrical applications it is found that when a continuous current is passed transversely through the skull, with the electrodes on the temples or mastoid processes, the most prominent effects are those produced upon the auditory apparatus. There is no visible stimulation of the motor areas either with interrupted or with continuous current, and it has been said that they do not penetrate the skull, but this is certainly an error,

It is quite easy to produce certain cerebral effects with direct currents, and the resistance of bone is not greater for interrupted currents than for direct currents. Some other explanation is therefore necessary for the absence of effects with interrupted currents. Owing to the spherical shape of the skull, diffusion of current is favoured, and therefore the density of current is greatly lowered at a short distance away from the electrodes. For this reason, the stimulation becomes evenly divided over the whole of the area between the electrodes, and the effects produced are likely to be effects of stimulating the brain as a whole rather than those of stimulating any small part of it.

Moreover, the skin of the head is very sensitive to induction coil currents, and the applications soon become very painful if the currents are strong, and this prevents close observation on the part of the person experimented upon.

Battery currents produce effects upon the brain which can readily be perceived although stimulation of the motor cortex has not been accomplished. Leduc has made many experiments upon the application of electric currents to the brain and he states that he has been able to recognise the successive production of aphasia and of motor paresis by the inhibitory influence of continuous currents applied to himself, with the negative electrode on the forehead.

He has also described the condition known as "Electric Sleep" produced by intermittent currents sent longitudinally through the brain, and a whole series of other peculiar phenomena, such as astasia, ambulatory automatism with psychic blindness, acceleration and slowing of respiration, states of lethargy and of catalepsy, loss of memory, and epilepsy.

(16) *Electric Sleep*:—Leduc has published an account of some remarkable effects produced by rapidly interrupted currents passed longitudinally through the nerve centres ("Le Sommeil Electrique, Paris, Masson & Co., 1907).

The anode was placed on the hinder part of the back of a dog, or a rabbit and the kathode on the skull. The skin was

occurring in a factory at Prague to a man whose boots were wet with a solution containing potash salts and therefore conducted freely.

A man was killed in South Africa by 110 volts, alternating. The line wire had fallen to the ground and the man took hold of it to pull it to one side, and receiving a shock, fell into a gutter of running water. People, hearing his shouts, ran to his assistance, but by the time he was freed from the wire he was dead. Those who went to help him also received shocks.

When people have been killed by pressure of 200 or 250 volts, in almost all cases they have been in good connection by their feet with water or damp ground, and the discharge has been to earth.

As artificial respiration may restore people who have been apparently killed by electric shock, provided that there has not been a definite stoppage of the heart, this procedure should always be tried. Lucas has reported a case in which the patient, a boy of 15, received a shock from the 10,000 volts main, but recovered consciousness, and was taken to the hospital. The extremities were pulseless and in a state of solid oedema. Gangrene followed. Amputations were performed; the arterial trunks were found to be thrombosed, and the patient died on the 9th day after the accident. The phenomena are almost certainly phenomena of heat coagulation from the conversion of the current into heat in the tissues.

(To be continued.)

NOTES OF CASES

A CASE OF INFECTIVE GRANULOMA

BY

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A boy aged 12 years came under my observation for a chronic ulcer of the leg, the history being that it started like a pimple which went on increasing until it reached the size of

ordinary berry when it broke and formed an ulcer which gradually got increased. It yielded to no local treatment both allopathic as well as Ayurvedic. It was there for three months when I saw it. The condition was as follows:—

An ulcer situated on middle of tibia (on the shin) being about 1½" in diameter with big, unhealthy, painful granulations which were uneven, covered with thin coating of white sloughs at certain places. It was not adherent to the underlying structures, and the ulcer showed absolutely no signs of healing at any point. I announced the case to be one of oriental sore and suggested the parents that the boy be injected intravenously with tartar emetic. The patient however did not want the injections as he said he never heard of a sore being treated with such injections and would want me to treat it palliatively which I did not, as I thought it would do no good as the boy was treated already by doctors locally, without any good effect. So I suggested if they did not want me to inject the boy, I shall have a slight operation of scraping on the wound under local anaesthesia, to which they consented. After thoroughly scraping the ulcer and cauterising it with carbolic acid, the wound made recovery within two weeks until it reached the size of rupee. Then it would not heal, and remained stationary for about 2 weeks, by the end of which another pimple appeared 1" away from the original sore. This pimple I had the occasion to observe in the boy. It went on increasing until by the end of the week it reached the size of a berry, when it broke and from it a big granuloma (like the core of a boil though it was not a core) came out. I had the occasion of observing good many cases of oriental sores both in the civil and military and this case appealed to me to be one like the oriental sores which I had kept under my observation before and treated with tartar emetic injection intravenously. I told the parents if they wanted a cure, they must allow me to inject the boy, else I should be left alone.

They consented and prior to my injecting the boy, I had the fortune of consulting the case bacteriologically with Doctor J. C. Bharti, L.M. & S. in charge laboratory, Civil Hospital, Hyderabad, who took the scraping of the ulcer and examined the peripheral

blood as well. But before he examined the specimen he told me that the case seemed to him as well, to be one of oriental sore, and he would be very much pleased to see the Leishman Donovan's bodies, and demonstrate to students, but unfortunately the Leishman Donovan bodies were absent. His original report I am herewith attaching. I was not satisfied, for the wound presented such a typical look of oriental sore that in spite of the negative result of Leishmaniasis I started injecting the boy with tartar emetic intravenously every day with the following strengths:—

1st day $\frac{3}{4}$ gr of tartar emetic plus 1 gr of table salt in 10 c. c. of water (with reactionary fever on the same evening).

2nd day 1 gr of tartar emetic plus $1\frac{1}{4}$ gr table salt in 12 c. c. of water (with reactionary fever on the same evening.)

3rd day 1 gr of tartar emetic with $1\frac{1}{4}$ gr table salt in 12 c. c. of distilled water, (with reactionary fever on the same evening.)

4th day $1\frac{1}{2}$ gr tartar emetic with $1\frac{1}{2}$ gr table salt in 12 c. c. distilled water (with reactionary fever on the same evening).

5th day $1\frac{1}{2}$ gr tartar emetic plus $1\frac{1}{2}$ gr table salt in 12 c. c. distilled water (with reactionary fever and vomiting on the same evening.)

6th day $1\frac{1}{2}$ gr tartar emetic plus $1\frac{1}{2}$ gr table salt in 12 c. c. distilled water (with reactionary fever and vomiting on the same evening).

By the end of the 6th injection, the wound had the size of a 2 anna bit and the other sore of the size of 2 heads of pins together. The case healed entirely within 10 days' time. I write this to invite opinion of my fellow professional brethren, asking them if there is anything else besides Leishman Donovan bodies than causation of such chronic ulcers.

Is tartar emetic a specific for Leishmaniasis or that it is an allround miraculous cure for chronic lesions of skin.

BACTERIOLOGICAL REPORT,

BY

DR. J. C. BHATT, L. M. & S.

I examined the scraping of the ulcer again as well as the film of peripheral blood taken from your patient's finger for detection of Leishman Donovan's bodies. I regret to say that neither of the specimens shows positive cutaneous Leishmaniasis. I am now convinced that your patient is not suffering from oriental sore as you suspect and I too did, before seeing the specimens. The only peculiar thing I found was that the scraping film showed different scattered polymorphonuclear cells which had ingested cocci. This ingestion of cocci was a conspicuous feature throughout. Now these cocci could not have belonged to the fact of surface contamination as we took special care to wash the parts well with normal saline before attempting to take the scrapings for bacteriological examination.

Why not publish the case with a view to get an answer from experts in bacteriology as to the significance of such ingested organisms (Cocci) in cases of suspicious oriental sores; why the ingested cocci were all of one type, thus suggesting oneness of causal factor.

NOTES ON A CASE OF A TUMOUR IN THE SOFT PALATE.

BY

MAUNG SAN, U. L. M. P.

Civil Hospital, Akyab.

An Arakanese Burman named Mg Gna Nat Xe, aged 41 and cultivator by occupation, was admitted to the Civil Hospital Akyab on the 9th September 1921 for the treatment of a swelling in the soft palate of three months' duration. Patient told that he had noticed that this lump was at first about the size of a marble without any form of pain but uncomfortable feeling in the mouth associated with difficulty in the acts of respiration, mastication, and deglutition. One night as I was taking my round I

heard a loud noise in the ward, where he was sleeping. I again noticed that he was breathing through the mouth as the nasal breathing was obstructed.

There was no previous history of syphilis or any other disease but he was a habitual drunkard. Physically, he was a full blooded and highly developed muscular man and in any region of his body there were no secondary involvement of the lymphatic glands even the cervical glands. Almost the whole oral cavity was taken up by that lump.

EXAMINATION OF THE TUMOUR.

Inspection:—The tumour could be seen in the soft palate on whose mucous membrane over the lump the superficial veins are dilated and running in a network fashion. The size of it was about that of a full grown lime. It was regular in shape, protruding over the tongue without touching the set of teeth in the upper jaw. The mucous membrane was smooth and congested and the superficial veins were emptied on the continuous digital pressure. The tumour itself was not moveable apart from the palate. It was hard to the touch. The limit could be fully ascertained by feeling behind the palate. There was no pulsation.

Auscultation:—No bruit of any nature could be heard.

GENERAL EXAMINATION:

Patient presented no cachectic look as is seen in majority of malignant growths. There were no enlarged lymphatic glands. Impulse and fluctuation were absent; other systems were all right, no clinical picture of any other disease could be seen.

Diagnosis:—In this case, the position of the tumour, patient's age, no secondary involvement of the lymphatic glands pointed to the tumour being benign.

TREATMENT.

The patient was prepared and chloroformed and when fully under the Civil Surgeon and the Resident Medical Officer, with whose assistance, a superficial free incision of about two and a half inches was given in the middle line of the tumour and the

mucous membrane was reflected and a white shining surface was exposed, then it was shelled out from the palate and when it was found to be attached by a strong fibrous band to the alveolar process of the hard palate, he cut it. This was followed by a considerable haemorrhage which was controlled by a gauze plug. Then the bleeding vessels were ligatured and the mucous membrane was stitched up after the introduction of a thin drainage gauze and was left in for 24 hours.

POST-OPERATIVE TREATMENT.

The drainage gauze was removed the following morning when the bleeding was found to be stopped and replaced and dressed. The patient reached an uneventful recovery.

DIET.

The patient was put on milk diet for about four or five days and after each feed his mouth was given an antiseptic gargle.

RESULT.

The patient was discharged cured on the 3rd October 1921.

REMARKS.

1. I brought forward this case to your notice as a tumour in this region is of rare occurrence and although easily diagnosed when operated may give rise to some difficulty from its position.
2. The weight of the tumour is one and a half ounces.
3. The tumour was preserved in spirit in the laboratory of this hospital.

IMPORTANCE OF PHYSICAL EXAMINATION OF THE GENITALS IN RETENTION OF URINE IN AN UNMARRIED GIRL.

BY

MAN SINGH, L.M.P.,

Sub-Assistant Surgeon.

Patient A, aged 18 an unmarried Burmese girl was brought into Sub-Civil Hospital at 3 p. m. on the 1st Dec. 1920, for the treatment of retention of urine for 72 hours. The parents of the

the patient was dismissed as cured. There were no adverse symptoms after injection and there has been no relapse.—ANDREW J. HURTON.

Ovarian Grafts.

By M. Tuffier (*Paris Medical*, 13th August 1921).—M. Tuffier gives statistics of 230 cases of ovarian grafting done to obviate the symptoms following on ovarian castration. In 16 cases, ovaries, which have been preserved in a cold chamber, were used. In the remaining 214 cases the graft was either from one woman to another or from the woman herself. Heterogenous grafts never gave any functional result, but with the autogenous graft menstruation was established in from five to seven months, but the results were of short duration. An ovary or a fragment of an ovary grafted anywhere in a woman who has still her uterus can restore physiological conditions, but it is still unknown how the restored function can be made permanent.—ANDREW J. HURTON.

Danger of Combined Irradiation and Caustic Applications.

McKee and Andrews (*Journal of American Medical Association*, 5th November, 1921) draw attention to the dangers of combined irradiation and application of stimulant remedies. Following exposure to X rays or radium (for treatment or diagnosis) the skin becomes hypersensitive, and the use of stimulants, irritants, or caustics may result in lesions, indistinguishable, clinically and pathologically, from radio-dermatitis of first, second, or even third degree. Conversely, the use of such topical applications may render the skin hypersensitive to the rays, with similar disastrous results. A number of very instructive illustrative cases are given.—J. F. SMITH.

Argyria from Prolonged Use of Argpyrol.

Goldstein (*Journal of American Medical Association*, 5th November, 1921) records a case of argyria from use of a gargle of argpyrol twice daily for a year.—J. F. SMITH.

THE BEST METHOD OF OPERATIVE APPROACH IN ACUTE APPENDICITIS.

Hamilton Balance advocates the use of an oblique incision over the iliac fossa in preference to the mid line or right semilunar line incision in cases of acute appendicitis operated upon during the first two or three days of illness. The incision is made in the same line, in the external oblique, the internal oblique, and the transversalis muscles. There are certain conditions of fundamental importance which should be remembered when an operation on a case of acute appendicitis is undertaken. These are that the shortest route should be chosen to the infected area, and fullest possible view obtained of it; that the intestines and other abdominal viscera around this area should be disturbed as little as is consistent with efficient treatment of the infection; that the operation should be performed as rapidly as possible, and that the appendix in all cases, with very few exceptions, should be removed. The oblique incision fulfills these conditions and admits of being extended at either end. The writer has used this incision for twelve to fifteen years and has never known it to cause a ventral hernia.—*British Medical Journal*.

THE C. P. AND BERAR CONFERENCE RESOLUTIONS.

GOVERNMENT'S REPLY.

The following reply was received from the Government in reply to the resolutions passed at the Conference.—

I am directed to refer to your letter No 12-1 dated the 30th November 1921 forwarding a list of resolutions passed at the first annual Provincial Conference of the C.P. Branch of the All India Sub-Assistant Surgeons Association held from the 20th to 22nd November 1921 and to say that the Government (Ministry of Medical Administration and Public Health) is not at present prepared to take any further action on any of the resolutions of the Conference except Nos. 6 and 8 in connection with which I am to communicate the following observations.—

Resolution 6. In 1915 enquiries were made from the Principals of Medical Colleges in India as to whether a few Sub-Assistant Surgeons of this province could be admitted into their Colleges for the M. B. class but they all refused admission on the ground that Sub-Assistant Surgeons did not generally possess a higher educational qualification than the matriculation standard. The Inspector General of Civil Hospitals is being asked to address the Principals of these Colleges again on the subject.

Resolution 8. The Government agrees that the present security bond of Sub-Assistant Surgeons should be modified so as to reduce the period of bond from 10 to 5 years and the amount of the bond from Rs. 1000 to Rs. 600. The Inspector General of Civil Hospitals is being asked to amend the form of bond accordingly.

ASSOCIATION REJOINER.

A meeting of the Association was held at the Mayo Hospital on 12-3-22 and the following resolutions were passed.—

1. The Association expresses its profound regret at the wording of the letter which the Government have sent in reply to the resolutions of the 1st Provincial Conference of our Association. As the Government have not been kind enough to say anything about the reasons which prevent them from taking any action on the resolutions, we fail to understand why our representations have thus been indifferently treated. We presented only such of our grievances as are most genuine requiring immediate redress, but the indifference with which they have been treated cannot but rouse a deep sense of pain and extreme disappointment. Provinces like Bengal Madras and Assam having realised the needs of the time have increased the salaries of the Sub-Assistant Surgeons in spite of huge financial deficits and it is but fair that we in the Central Provinces be treated with equal justice. We therefore request the Government with great earnestness and humility to adopt a more kind and sympathetic attitude and reconsider our demands (as made in the Conference resolutions) which are not only legitimate but also most sincere.

2. The Government have been pleased to reduce the period of bond from 10 years to 5 years. The Association expresses its thankfulness for the same but at the same time requests the

Government to do away with this indentured system of labour altogether.

3. Whereas the Sub-Assistant Surgeons are not allowed to join the long course at the Calcutta Tropical School of Medicine which is open to the Assistant Surgeons and the Military Assistant Surgeons, this meeting resolves that no Sub-Assistant Surgeon serving in these provinces should join the short course of 3 months at the said school.

4. Resolved that a copy of the above resolution be sent to all the Sub-Assistant Surgeons in the province.

5. The All India Sub-Assistant Surgeons' Association should also be requested to take up this question and move the authorities to allow the Sub-Assistant Surgeons also for the long course.

IN THE PUNJAB.

Copy of letter No. 30216 Medical, dated 3rd December 1921, from the Secretary to Government, Punjab, Transferred Departments, to the President, the All-India Sub-Assistant Surgeons' Association, (Punjab Branch).

I am directed to convey the following orders and commands of the Punjab Government, Ministry of Education on the resolutions passed at your Association's general meeting of the 23rd April 1921.—

Resolution 2: Orders on the memorials regarding the new ten years' bond have been communicated to the Inspector General of Civil Hospitals, Punjab, in this office No. 28464 dated 15th November 1921 for the information of the memorialists.

Resolution 3. Orders have been issued under which, in future, on suitable vacancies occurring, a maximum of six places in the cadre of Civil Assistant Surgeons will be reserved for Sub-Assistant Surgeons, who will be eligible for promotion to these places on recommendation for exceptional attainments and who pass such tests as the Inspector General of Civil Hospitals may prescribe.

Resolutions 4 and 5: Government regrets that it is unable in the best interests of the institution as well as of the Medical Services themselves to alter the allocation of the posts mentioned in the Civil Hospital, Amritsar.

Resolution 6: Sons of medical men who have passed the FSc. in the I or II Divisions will in future be admitted in Medical Schools and Colleges in preference to others to the extent of 5 per cent of the total vacancies available in each institution provided that no preference shall be given on this ground to a IInd Division over any 1st Division, candidate.

REVISED PAY.

Statement of revised scale of pay of Sub-Assistant Surgeons in the different Provinces.

Name of Province.	Amounts.	Date from which revised.
Bengal ...	Rs. 60 on probation & 75—5—200	1—12—1921
Central India ...	60 to 150	1—4—1921
Rajputana ...	50 to 120	1—7—1920
Bombay ...	50 to 120	1—7—1919
Central Provinces ...	60 to 150	1—12—1919
United Provinces ...	50 to 120	1—3—1919
Punjab ...	70 to 175	1—10—1920
Burma ...	100 to 250	1—3—1920
Bihar and Orissa ...	60 to 150	1—4—1920
Madras ...	75 to 200	As soon as it is brought into force by the Surgeon General, Madras.

Note.—We understand that the scale of pay of Sub-Assistant Surgeons in the United Provinces has been raised to Rs. 75—200 (Time Scale).—Ed. I. M. J.

QUERY.

Will any of the readers of your valuable Journal kindly let me know through its columns their experience and tried treatment of Phosphaturia?

Acid benzoic, acid n. m. dil and general tonics have been used but with only temporary relief. The writer as well as some other S. A. Surgeons in this district are badly suffering from it.

Also the treatment of congestive headache. I shall feel highly obliged to those who will take the trouble of giving its treatment in full.

A S. A. S.

CORRESPONDENCE.

TO THE EDITOR, *The Indian Medical Journal.*

Dear Sir,

With reference to the article on Hiccough in the January No. of the I. M. Journal by Dr. Kraft of America, I want to bring the following points to your notice which will be of some interest:—

Within these six months, I have come across some persistent cases of Hiccough, about 29 in number, lasting from 4 to 9 days, without any other traceable cause, except dyspepsia and constipation. The first series of cases, 22 in number occurred within the month of October 1921, as these cases came 3-4 a day, I thought it was a form of Epidemic Hiccough. The other series were 7 in number, occurred in the first week of January 1922; no cause could be ascertained other than dyspepsia and constipation, except in 2 cases of the first series, one of which a female, 20 years of age, was suffering from marked hysteria and the other case was a chronic Phthisical patient, who died within 15 days. The only treatment I adopted in all these cases was to begin with a smart purgative of calomel, mag. sulph. seidlitz powder, pill colocynth or as required according to the nature of the patient followed by the following mixture.

Re. Acid nitro-Hydrochlor m xv

Soda Sulph zi

Amm chloride gr. iii

2 Ir. Nax Vomiv

Aquanethi ad zi

Six doses, every 4 hours.

I hope my professional brothers will give a trial to such remedies before over dosing the patient with chloral, bromides, etc., which generally fail. More suggestions in this matter will highly oblige.

Yours Sincerely,
Lakshmi Datt Sharma.

TO THE EDITOR, *The Indian Medical Journal.*

I have come across with a boy aged 18 who had regurgitated and remasticated his food since he was a child. I enquired into the family history, but no evidences of heredity found. In my opinion, it is due to hurried meals and irregular hours of an indiscriminate youth or due to his leisureless occupation. But I know for certain that he is not employed anywhere and he began this while he was very young. However hasty eating is associated with regurgitation and the imperfectly masticated, solid particles return to the mouth either $\frac{1}{2}$ hour or sometimes 2 hours after meals. The regurgitation is involuntary. The boy says that there won't be any regurgitation if his appetite is poor. The condition is not at all manifested with any sort of discomfort or other signs of indigestion. He further adds that the remastication is very pleasurable, the regurgitated food, he says, being softer and sweeter than when first taken.

This sort of action I have observed only in animals like cows, sheep, etc—the ruminants. This faculty now seen in men depicts that we have descended from those animal dynasty. Further in the case of monkeys, I find a pouch for storing food which they utilise when they feel hungry. The present condition is closely allied to that of ruminants. I am observing the patient with certain dietetic changes and I shall be glad to write more of it then. The condition is very rare clinically. Yours,

Yours,
P. K. Kurup.

THE ALL INDIA SUB-ASSISTANT SURGEONS' ASSOCIATION.
Statement of accounts from January 1921 to 30th September 1921.

Cr.		Dr.	
	Rs.		Rs.
Balance as per last year's account ...	2,045	1. Printing and paper for Journals ...	2,710
Miscellaneous receipts (Amount received from Dr. Joseph Benjamin.) ...	400	2. Establishment ...	1,200
Subscription from old and new members including admission fees ...	7,124	3. House Rent ...	51
Advertisement charges ...	950	4. Stationery ...	404
Amount received from Dr. Dayal Singh for printing Military paper ...	110	5. Furniture ...	47
Donation from Bannu Branch ...	217	6. Other printing ...	44
		7. Travelling allowances... ..	543
		8. Postage and Telegrams ...	1,030
		9. Miscellaneous Expenditure ...	272
		10. Advance to clerk of General Secretary	80
		11. Amount refunded to Secretary, Indore Branch ...	15
Grand total Rs.	10,847	12. Amount due to various office-bearers	27
			7
Surjooprasad,		Total Rs.	6,426
Rai Bahadur,			3
General Secretary.		Balance as per list attached	4,421
			4
			7
			7

G. D. Khandekar,
M. C. P. S., Treasurer,
The All India Sub-Assistant Surgeons' Association.

ACCOUNTS OF THE ALL-INDIA SUB-ASSISTANT SURGEONS' ASSOCIATION

For the month of October 1921.

	Rs.	A.	P.		Rs.	A.	P.
Opening Balance	...	4,421	4 4	1. Postage and Telegrams	...	19	2 3
Miscellaneous receipts	...	...	...	2. Stationery	...	5	9 0
Subscriptions	...	207	2 0	3. General charges	...	2	0 0
Advertisement	...	74	12 0	4. Establishment	...	40	0 0
Amount recovered from the clerk of the General Secretary	...	10	0 0	5. Travelling allowance	...	54	10 6
				6. Rent	...	3	0 0
	4,716	0	10				
Details of Balances	Rs.	A.	P.	Total Rs.	124	5	9
General Secretary	...	0	1 9	Balance	4,591	11	1
Editor	...	2,270	13 10*		4,716	0	10
Postal Savings Bank, Indore	...	610	8 0				
Imperial Bank, Indore	...	1,494	1 0	Surjooprasad,			
Dr. Khandekar Treasurer	...	102	12 6	Rai Bahadur,			
Branch Secretaries	...	113	6 0	General Secretary,			
				The All India S. A. S. Association.			
	4,591	11	1	G. D. Khandekar, M. C. P. S.,			
				Treasurer,			
				The All India S. A. S. Association.			

* This item includes amounts paid to the Press for printing the Indian Medical Journal. Ed.

CONSOLIDATED ACCOUNTS OF THE ALL-INDIA SUB ASSISTANT SURGEONS' ASSOCIATION

From January 1921 to 31st October 1921.

	Rs.	A.	P.		Rs.	A.	P.
1. Opening Balance	...	2,045	5 7	1. Printing and paper for Journal	...	2,710	10 6
2. Miscellaneous receipts	...	402	14 6	2. Establishment	...	1,240	0 0
3. Subscription from old and new members and admission fees	...	7,331	7 0	3. House rent	...	54	0 0
4. Amount received from Dr. Dayal Singh for printing Military paper:	...	110	0 0	4. Stationery	...	409	15 0
5. Advertisement	...	1,024	13 0	5. Furniture	...	47	0 0
6. Donation from Bannu Branch	...	217	12 0	6. Other printing	...	44	0 0
				7. Travelling allowance	...	598	10 0
				8. Postage and Telegrams	...	1,049	2 9
				9. General charges	...	274	11 0
				10. Advance to clerk of General Secretary	...	70	0 0
Grand total	11,132	4	1	11. Amount refunded to Indore Branch	...	15	0 6
				12. Amount due to various Office bearers	...	27	7 3
Details of balances:—General Secretary, Editor, Madras	Rs.	A.	P.				
Postal Savings Bank, Indore	...	2,270	13 10	Balance	...	6,540	9 0
Imperial Bank, Indore	...	610	8 0		4,591	11	1
Treasurer, Indore	...	1,494	1 0		11,132	4	1
Branch Secretaries,	...	102	12 6				
	...	113	6 0				
	4,591	11	1	Surjooprasad,			
				Rai Bahadur, General Secretary,			
				The All India Sub-Assistant Surgeons' Association.			
				G. D. Khandekar, M. C. P. S.,			
				Treasurer,			
				The All India Sub-Assistant Surgeons' Association.			

The All-India Sub-Assistant Surgeons' Association.

List of balances with office-bearers on the 30th September, 1921.—

			Rs.	A.	P.
1. General Secretary	...	...	5	1	9
2. Editor at Madras	...	...	1,270	13	10
3. Dr. Rochiram, Karachi	...	...	122	8	0
4. Dr. Khandekar, Treasurer	...	...	775	15	0
5. Post Office Savings Bank, Indore	...	...	610	8	0
6. Imperial Bank of India, Indore	...	...	1,524	1	0
7. Branch Secretaries	...	...	112	4	9

Total Rs. 4,421 4 4

Surjooprasad,

Rai Bahadur,

General Secretary,

The All India Sub-Assistant Surgeons' Association.

G. D. Khandekar,

M. C. P. S.,

Treasurer,

LUCKNOW UNIVERSITY.

WANTED a Professor of Ophthalmology on a salary of Rs. 1,200 in the grade of Rs. 1200-50-1400 per mensem. Private consulting practice allowed in this subject. The appointment will be in the first instance on probation for two years.

Leave rules according to Civil Service Regulations.

Every Officer, Teacher, or other servant of the University holding a substantive appointment, and receiving a salary of Rs. 40 per mensem or more, shall be required to subscribe at the rate of 8 per cent of his salary to the Provident Fund, and the University shall make a contribution of 12 per cent of the subscriber's salary to the Fund.

All applications along with typed copies of testimonials and qualifications to be submitted on or before the 7th May, 1922, to the Registrar, Lucknow University.

Canvassing will disqualify any candidate.

The Hospital duties attached to the Post can be ascertained on application to the Superintendent, King George's Hospital, Lucknow.

THE Indian Medical Journal

Vol. XVI]

APRIL, 1922.

[No. 4

A RESUME OF THE CONFERENCE.

FOR once in the annals of the history of our Association a time has dawned that it should celebrate its sixteenth annual session at Bangalore, the fountain source of the activities of the cheif founder of our organisation—the late Dr. P.S. Ramachandrier. Unlike the proverb, “a prophet is not honoured in his own country” all honour was done to the founder who has built up the edifice of this huge organisation which has since spread far and wide not only in this country but abroad. The Mysore Sub-Assistant Surgeons spared no pains to make the function a grand and unprecedented success. If a function of this type had taken place some years earlier, the future of this humble but hard worked class there would have been brighter. We know of no other province in India which pays such a sorry wage to its subordinates in the Medical Department. We hope and trust that the benevolent Government of His Highness the Maharajah of Mysore will not forsake the claims of this useful class of subordinates even after the advent of the All-India Conference. Be it said to the credit of the Association that it has been able to achieve for this class some tangible benefits in different provinces after successive Conferences.

The session began at 1 P.M. precisely on the 26th December last when after the usual formalities Dr. Mylvaghanam, F.R.C.S., the President-elect was installed in the chair,

The A. V. High School was delightfully decorated for the occasion and almost all the medical men of Bangalore graced the occasion with their presence. The medical students as volunteers were at the post of duty and rendered great service during the session. The whole hall presented an animated appearance despite the fact there were several attractions and activities in the city, being busy Christmas season. Our Conference was in full swing as the programme was gone through. We cannot but touch the salient points in the course of the deliberations. Our old venerable General Secretary Rai Bahadur Surjuprasad presented the annual report as usual but to us who are familiar with him and his views we find that in the report there is a note more of mingled feelings of despair than any rays of hope. At the previous session at Delhi similar feelings were voiced forth and we believe these are but the inward feelings of the many thousands of Sub-Assistant Surgeons, so manifestly expressed through their Chief, the General Secretary. It is true that we have all deserved the sympathy and consideration of the powers that be but the result, we find, is neither encouraging nor satisfactory. Hence it is we, as well as the whole class for whom the Association exists, feel indeed very despondent over our future. Until and unless the urgent and pressing reforms urged by the Conference are put into force, we are afraid the discontent of the class will be lurking. The five years' course, the taking away of the bond system and the removal of all barriers in the different grades of the profession will surely mend matters and medical education can then be said to be perfect and no Council on earth will come forward and say that the training in any particular subject in India is deficient, especially when all the materials for the advancement of the science are abundantly to be found here. It is no surprise to us therefore that after convening so many Conferences that we should express disappointment and discontent—which our class is silently but patiently bearing all these years.

The address of Dr. Mylvaghanam is what it can be under the circumstances and expressed inability to do anything in these days of financial stringency and administrative control though he was for the unification of the profession as a whole and a fixed standard of emoluments for all medical men alike. It has been our experience that all the Presidents of our Conferences give us fresh hopes and encouragement while as a matter of fact they are far from being realised. The present lot of the Mysore Sub-Assistant Surgeons is indeed deplorable and it is high time that substantial and immediate relief should be given them. Whatever may be the financial stringency or otherwise, in the face of the semi-starved and deplorable condition of the Sub-Assistant Surgeons of Mysore we appeal to His Highness to give succour to these loyal subordinates who value their work more as a labour of love and who form the backbone of the Medical Department of the province. We need not write more strongly than stating that they are on the verge of starvation and any further postponement of their legitimate and longfelt want under the present economic stress and in view of the high price of the necessities of life in these hard times, will make their position intolerable and unendurable.

As is always the custom for some years past the Exhibition forms an adjunct to the Conference. The Sanitary, Scientific, Indigenous Drugs and Child Welfare Exhibition opened on the 27th December under the distinguished presidency of Rajamantrapravina P. Raghavandra Rao, B. A., B. L., Second Member of Council, who has in his charge the medical portfolio of the province. The exhibits were all neatly arranged in separate blocks in the upper storey of the building and many of the lay public from the Cantonment and the City apart from the medical men took a keen interest. The whole Exhibition was well managed and it reflects great credit on the organisers. While thanking the President for the glorious tribute paid to the Sub-Assistant Surgeons for

the getting up of this useful Exhibition, we are constrained to say that he followed the trend of his predecessors' pronouncements in eulogising our activities but when it came to the question of relief, we are left in the lurch. It is perhaps the irony of fate that we should be praised beyond measure but not derive materially benefits in the matter of pay and prospects.

The Conference concluded on the third day after the reading and discussion of several scientific papers under different sections and after passing the resolutions. The Reception Committee located comfortably all the delegates in the Central College Hostel and took them to all the places of interest both in the City and the Cantonment and on the eve of their departure a grand dinner on a lavish scale was given when almost all the medical men of the place were present. It will be but doing our duty if we appreciate the kindness and sympathy extended to us by Dr. S. Subba Rao, B. A., M. R. C.S., Chief Medical Officer, Victoria Hospital, Dr. S. Amritraj, Health Officer, Cantonment and Fro. P. Srinivasa Rao of the Central College, Bangalore. The Exhibition continued for a week thereafter and every day lectures and demonstrations were given to the public.

THE Indian Medical Journal

A Monthly Magazine devoted to Medicine,
Surgery, Public Health, etc.

Published by the All-India Sub-Assistant Surgeons' Association.

EDITED BY D. V. VENKAPPA.

Vol. XVI]

MAY, 1922.

[No. 5.

OURSELVES.

For the past few months certain financial retrenchments have been to us a question of immediate necessity and, therefore, we had naturally to turn our attention to some reform in this direction. And, after all, we have been able to achieve our objects, though after some delay, which we could not possibly avoid. We are, however, glad to inform our readers that the work of the Journal is now left in the hands of new printers with a view to effect greater efficiency and economy. Exigencies of space forbid us from entering into the causes of, and details connected with, these changes. In conclusion, we beg to offer our unqualified apology to our subscribers, advertisers and readers for the disappointment caused to them by the delay in the publication of this issue. We hope to make the Journal current with the August issue and the publications hereafter more attractive and interesting.

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Vaccines in Venereals.

The therapeutic employment of Antiserums and Vaccines is still in its experimental and developing stage, and to restrict the same "to what has been proved and is experimentally demonstrable" is decidedly safer from the standpoint of the sufferer.

It is true that the series of controlled experiments demonstrating the efficiency or otherwise of the popular "Mixed Bacterins" have not yet reached the stage of sufficient efficiency to challenge the theoretic scrutinisation of a scientist's laboratory; it is also true that there are still factors therein we do not understand; but this will not justify us to ignore the experiences of men who have practised and are still practising medicine every day of their lives, scientific men who have seen the disease over and over again and have known through repeated successes when and what results to get. It is true that probably none amongst them could guarantee us a cent per cent. perfect result, but practically they would demonstrate that Bacterins have the power of "stimulating the generation of specific antibodies". A clinical study is less easy to make than a laboratory one.

Bacterins like their sister medicaments which are now being so widely used by the majority of

physicians, have had their ups and downs. They were rushed and heralded, as a remarkable specific for all bacterial diseases, but mud was soon thrown on their wide use, to their sorrow be it said, by their mere misuse by men, ignorant or indifferent themselves as to whether or not they were "indicated".

A positive balance seems to be once again in store for them. While recognising the fact that we "should not resort to the empiric use of Bacterins on insufficient grounds" we do know that they have the direct power of stimulating "the specific resistance" against the same kind of organisms as are used in the Bacterins. Times out of number have successful demonstrations of vaccines in cases of Typhoid and even in the mixture of Typhoid paratyphoid A. and paratyphoid B. challenged and won over dissenting views. Their value has been universally established; the definite immunising powers of the type Pneumococcic, as well as the Streptococcic vaccines, whose potency in preventing and treating Pneumonia have all been most convincingly proved by the splendid work of specialists in the Army, not to mention the results of the collaborated work of Doctors like Cecil, Austin and Park at their city bureau of the New York laboratories. Gonococcal vaccines have given exceed-

ingly convincing results in chronic cases of Gonorrhœal Rheumatism. There are still some, however, who take a very arbitrary stand and condemn them in toto, refusing to listen to any argument in their favour. It is true, there are some things we have to learn about Bacterins, but it is equally true that we have also many things already known, and we are still learning every day about them too; and it is very encouraging also to know that those opponents of Bacterin Therapy themselves are slowly but surely yielding their ground. Successful practice of Vaccine Therapy certainly calls for a clear understanding and true judgment of the essentials which enter into the antigenic efficiency of bacterial suspension. Ignorance or disregard of these elements naturally results in failure. Suspension prepared from feeble and degenerated organisms, or from those consisting only of a single strain of bacteria naturally fails to stimulate sufficient immunising response; but those made from "healthy virulent organisms", and which are "Polyvalent" arouse the immunising mechanisms against infection most intensively.

An excess in the process of heat sterilisation is very often responsible for inert suspension. The strains and species of organisms

found in the vaccine must be representative of those of the organisms in the infection. A proper regard must be given to other indicated measures alongside of the use of vaccines. Local antiseptics in conjunction with constitutional immunisation and general treatment should never be neglected.

A timely administration of a polyvalent bacterial suspension in acute infections is an essential for good results. Bold, regular and careful administration, sufficient in duration must generally eradicate the existing infection.

Physicians with insufficient practical experience with polyvalent bacterial suspensions have raised their voices and have warned the world against some very harmful possibilities in their use; but these cries are but merely those in the wilderness in the face of those highly instructive and voluminous bibliography on the subject of Vaccine Therapy. It is true that the non-specific and specification of vaccines could with advantage be studied more to let us appreciate the importance of collateral immunity; but it need not necessarily imply the denial of the specification of vaccines. Dr. Gerahty is one of the complainants who claims that the results obtained from gonococcus and other vaccines are non-specific and that they are liable to create dangerous reactions.

Now, is it a mere confusion on his side, of shock therapy with the "Intra-venous use of vaccines" "with immune therapy" used subcutaneously? Shock therapy from intra-venous injections of vaccines or proteos results in a characteristic chill and fever and is always dangerous. But vaccines used subcutaneously and in standard dosages are always harmless.

Dr. Lumb in his book on the systematic treatment of Gonorrhœa statistically proves that mixed stock vaccines are successful both in acute and chronic infections. He reports 500 consecutive cases of Gonorrhœa treated with vaccines in 1918 showing a material reduction in the duration of the disease in addition to the permanence of the recoveries, all due to vaccines, less than one per cent. having relapses. In many cases where autogenous vaccines failed polyvalent stock vaccines gave gratifying clinical results. In acute cases during the first few days or a week after bacterin treatment the characteristic change in the clinical symptoms will develop. Irritation, burning pain in the urethra and the discharge will gradually be faded and gone, the swelling in the infected urethral membrane will subside and passage of urine will go on with much less pain. Repeat vaccine injections first with an interval of three days

for the first week, then again with longer intervals after; and depend upon it that favourable symptoms will continue until the patient is actually cured in three or four weeks. Eliminate surface infections beyond the reach of antibodies by local treatment. If treatment is started during the first or second day after the onset of symptoms we can avoid the major developments of all destructive processes at once. But in addition to the local treatment and the general curative injections it will be a grand achievement indeed to all future sufferers if a scientific protective and preventive measure could be invented as in the case of many other bacterial infections, so that the fabulously prolific bacilli are closed in both from outside as from their lymphatic and blood pastures and be sent to their immediate and most deserved end.

Only a few years back it was impossible to convince even some of the master minds who could be hyper-critical of the impossibility of immunising simultaneously a patient against typhoid and the forms of paratyphoid; to-day every one takes it as logical. A few months back it would have been impossible to have obtained recognition for a pneumococcic vaccine, but we know what it has won for the sufferers and so to the world at large.

Nothing venture nothing gain. It is a scientific venture that we are on, with prospects of immense good to the human kind at large, and manly grit swathed in sweet humanity must find out a secure hold for our erring brethren. It cannot be done too soon either.

Curiosities of Human Temperature.*

From 92° to 114°.

BY SYED ALI HASSAN,

*Senior Demonstrator of Anatomy,
Medical School, Amritsar.*

Is there anything more wonderful than the delicate mechanism of the thermic centre which regulates the temperature of our body?

Seated deep down in the centre of the brain, writes "A. Physician," like an operator surrounded by an immense switch-board, it is constantly at work, trying to adjust our temperature to the normal 98·4 degrees Fahrenheit. But it never quite succeeds.

First of all, it has to contend with the daily or "diurnal variation", which means that our temperature is normally slightly higher in the evening. Even this is not always true; for, should you happen to be a night worker, your temperature becomes "in-

verted", or slightly higher in the morning than in the evening; and this peculiar type persists, often for several weeks after the cessation of night work.

Again, who realises that, after walking for an hour at ordinary pace, his temperature has gone up one degree, while, should he have travelled six miles in that time, he will be almost two degrees warmer?

The great difference, of course, between an exercise temperature and, say, that associated with influenza is that the former is not accompanied by the poisons and toxins of the disease. It is these latter which are mainly responsible for the headache, mental depression and general malaise which one experiences with a specific fever.

So great is the adaptability of our heat-regulating mechanism that our temperature remains wonderfully constant, whether we be resident in tropical or in polar regions.

Apart from high external temperature, we are capable of withstanding very high internal ones. Probably the highest recorded in man has been in cases of heat-stroke, 110 degrees Fahrenheit being not uncommon, while 114 degrees has occasionally been recorded, though it has invariably proved fatal. Under favourable conditions, however,

* Read at the Fourth Punjab Provincial Conference of the A. I. S. A. S. Association.

recoveries from the former temperature have been reported. The lowest temperature recorded has probably been in the vicinity of 92 degrees, although the ordinary clinical thermometer does not register below 95 degrees; but it is rare to find a normal person with a morning temperature of less than 97 degrees. These low temperatures have usually been observed between the hours of 2 and 4 A.M., when vitality is at its lowest ebb, when sleep is most profound, and when the bodily functions are almost quiescent.

And so, throughout our lives, this wonderful mechanism is continually on guard, regulating our temperature to within a fraction of a degree, protected, by its position in the centre of the brain from almost every kind of physical injury, and resistant to all but the most potent drugs.

LIFE OF LORD LISTER.*

BY SIR RICKMAN JOHN GODLEE,
BART., K.C.V.O., M.S., F.R.C.S.

It was at Stoke Newington on the 5th April, 1827, that Joseph Jackson Lister gave birth to his fourth child and second son, Joseph. Joseph Lister spent his childhood and youth in a

* An Extract sent for publication by N. S. Narasimhan, L.C.P.S., (Bombay), L.M.P., (Madras).

quaker atmosphere. Joseph Jackson Lister was in many respects a remarkable man. Although he left school at the age of 14 and went at once into business, he gained a world-wide reputation for his discoveries in the field of optics, which led to the production of the "achromatic lens" and the perfection of the modern microscope. To a great extent he was self-taught. Between the years 1824-1843, whilst actively engaged in business, he found time to make his mathematical calculations actually to grind the glasses himself and to supply the necessary data to Tulley, Loss and Smith who were the manufacturers. This work gained for him the fellowship of the Royal Society in 1832 and brought him into contact with a large scientific circle, amongst whom were Bowditch, Airey, Herschel, Sir Richard Owen, and Dr. Hodgkin, with the last of whom he wrote sundry papers describing microscopic observations, the most interesting of which dealt with the then unsettled question of the true shape of the R. B. C. of the blood.

His powerful mind, clearness of thought, mathematical accuracy and natural humility exerted a great influence upon his son, an influence which in public and private was frequently acknowledged. He was an excellent artist.

CHILDHOOD—SCHOOL DAYS, 1827-1844.

Joseph Lister went to two private schools. More than thirty of Lister's school compositions when he was 15 or 16 years old are preserved. The most interesting are four, dealing with "The Human Structure—Osteology" and one on "The Similarity of Structure between a Monkey and a Man" illustrated by beautiful pen-and-wash drawings. It is clear that before leaving school he had a fair knowledge of the human bones and some acquaintance with the comparative anatomy. At an early age he began to macerate bones, dissect fish and small animals, and to articulate their skeletons. But long before this, when quite a child, he had announced that when he grew up he would be a surgeon; it was entirely a spontaneous wish. None of his relations were doctors. He had acquitted himself well in "Classics".

UNIVERSITY COLLEGE, LONDON;
UNIVERSITY COLLEGE HOSPITAL.
EARLY PHYSIOLOGICAL WORK.
1844—1853.

Lister left the school in 1844 at the age of 17 and was sent to University College, London, which was ostentatiously non-sectarian and the only resort for those who were detained from entering the older seats of learn-

ing on account of the religious tests which were imposed. The first three years were occupied in passing the Matriculation and taking the B. A. of the University of London. Such a preparation for the medical career his father thought essential, and Lister himself recommended it to young men entering the profession if time and money could be spared. He had an attack of small-pox and had a long holiday in the early part of 1848. His preliminary medical studies began in earnest in the winter season of 1848, under the guidance of teachers of considerable eminence. Lindley was Professor of Botany, Graham of Chemistry, and Grant of Comparative Anatomy. George Viner Ellis the very soul of exactitude, taught Anatomy, and W. B. Carpenter, Medical Jurisprudence. Lister learned more of the preliminary sciences including Physics, than the average medical student and in a far more practical manner. Amongst all these men of science who watched over his earlier years Wharton Jones and Sharpey apparently exercised the greatest influence. Wharton Jones, at this time about 40 years of age, was Professor of Ophthalmic Medicine and Surgery at University College. Particular mention may be made of his investigations on the circulation of the blood and the phenomena of inflammation,

because they were carried out of the frog's web and the bat's wing, and, no doubt, suggested to Lister this method of research, which he afterwards followed with such fruitful results. Wharton Jones was not his official instructor in Physiology. It was an accident that Lister became acquainted with the physiological studies of the Professor of Ophthalmology.

William Sharpey is called the father of modern Physiology because he was the first to give a special course of lectures in Physiology, which before his time had been treated as an appendage of Anatomy. After completing his medical course in Edinburgh he went to Paris to study clinical surgery under Dupuytren, and operative surgery under Lisfranc and became a friend of Syme. He travelled through France, Switzerland, Italy, and Austria and settled in Edinburgh where he taught Anatomy, with Allen Thompson as his physiological colleague. He left Edinburgh in 1846, to become the first Professor of Physiology at University College. What modern physiologist would dream of spending so long in perfecting himself in medicine and surgery before settling down to teach his own speciality!

Syme, Allen Thompson and Sharpey were the three presiding geniuses over Lister's early career.

At the present time students learn nothing of medicine or surgery until they have finished with the preliminary sciences. But it was not so at Lister's time and students became early acquainted with the hospital staff at the very beginning of their studentship. The staff of the University College Hospital included many well-known Physicians and Surgeons. Amongst them were Walshe, Jenner, and Erichsen. Lister served as home physician to Walshe and afterwards in 1851 as house surgeon to Erichsen. It was a useful discipline to work under him though he was not an inspiring teacher.

Lister was present at the first operation performed under Ether by Robert Liston at University College Hospital, in December 1846.

The condition of surgery in these days.—There was nothing in what he saw in the operating theatre to attract the attention of the student.

There was no difference from the surgery of the pre-anæsthetic days—no new operation; no new fields;—breathless speed. But when the student followed up his cases there was much to make him think and much to make surgery a sad calling for a beginner. Amongst his fellow students were many who afterwards became distinguished.

Lister figured largely at the debating society and took a very active part in the affairs of the hospital medical society. Here he headed a sharp attack on the homeopaths. He also read papers before the society which showed the direction of his thoughts; one was on hospital gangrene and one on the use of microscope in medicine. The latter led to much difference of opinion, some holding that the employment of microscope would sound the death knell of accurate clinical observation.

Lister became one of the champions who were entrusted to maintain the reputation of the University College. An apologetic letter from Dr. W. B. Carpenter who had placed him last in the honours division at the physiological examination for the M. B. degree in November 26th, 1852, shows the spirit of enquiry and doubt with which he began his studies for the scientific ground-work of medicine, a spirit which required a satisfactory proof of the truth of even the most hallowed traditions. With the acquisition of the M. B. of the University of London and the F. R. C. S. in 1852 his long studentship of nine years at University College drew to a close. During the latter part of it he had done some remarkable original work which is due to the

inspiration of Jones, Sharpey and his father.

The work was microscopical and experimental. The microscopical part was published in two papers in the 1st volume of *Quarterly Journal of Microscopical Science*. The first deals with observations made during 1852 regarding the muscular tissue of the Iris. Professor Kolliker of Wurzburg had been the first to show that this contractile curtain in front of the lens was made of involuntary muscular tissue. He had also proved that all involuntary muscular fibre was made up of cells. Bowman was opposed to them. Lister confirmed and extended Kolliker's observations and for the first time demonstrated the existence of two distinct muscles in the iris, the dilator and sphincter, for enlarging and diminishing the size of the pupil. The paper also contained some interesting original physiological observations on the functions of involuntary muscular fibre. The second paper dated 1st June 1853 is also a confirmation of some observations of Kolliker, in this case on the involuntary muscular fibres of the skin. These minute muscles elevate and depress the hairs causing the familiar phenomena of goose-skin and the bristling of a dog's crest on the approach of a suspected enemy. Lister added definiteness and accuracy to these

of the University lectures. This had a double advantage, (1) of keeping the Professors up to the mark and secondly of training the younger men and providing a good selection of candidates, who had shown their capacity for teaching, whenever a University Professorship fell vacant. In 1828-29 Syme had 250 pupils though Liston, Lizars, Fergusson were all lecturing on surgery at the present time.

Syme had 200 surgical beds at Edinburgh instead of 60 at University College and Lister decided to spend winter with Syme and all thought of a continental tour was away from his mind.

In November 1853, Lister was appointed Mr. Syme's supernumerary clerk or house surgeon. It was a non-resident post much sought after and the duties were to assist at every operation with hand instruments, sponges, etc., and generally to keep an eye on the cases and take notes without sharing the responsibility of the treatment. He read on November 6th, 1853, to the Edinburgh Medico-Chirurgical Society a valuable short paper on the microscopical structure of a cancellus or a pedunculated exostosis removed by Mr. Syme on October 2nd, 1853, from the os humeri of a young lady aged about 20 years. In it he demonstrated, probably for the first time, that the method of ossification of these

growths was the same as that which occurs in the epiphyseal cartilage. But he did not apparently trace their origin to imperfection in the natural process of ossification.

Lister became Syme's house surgeon in the Christmas 1853 and continued till the end of February 1855. He had twelve dressers under him who all called him 'Chief'. The relations between Lister and Syme were then of surgeon and consultant. Syme seldom interfered with the treatment of ordinary cases and allowed the exceptional privilege of using his own discretion as to which of the cases admitted at night he should himself operate on. During this period Lister had the privilege of performing many operations before the students: amongst others he speaks of one on a cataract successfully removed "without trembling of the hand."

He sent to the *Lancet* weekly summaries of Syme's lectures, which will be found in the pages of that journal between January and December 1855 and recorded some of Syme's cases in the *Monthly Journal of Medical Science*. He also conducted in 1855 a heated controversy with Mr. W. Adams in defence of Syme's view with regard to the pathology of clubfoot and allied diseases and his method of treating them (*Lancet* 1855, Vol. 11,

pp. 204 and 447). In this the views of the Master with regard to the specialists in general and orthopædists in particular are clearly revealed and cordially endorsed. This was Lister's one and the only effort in a controversy of this description.

Syme clearly showed that fault in the manner of administering the ChCl_3 is at the root of the occurrence of the fatal cases in London, and that too in consequence of the neglect, more or less, of a few simple principles. In 1854 Dr. Mackenzie who was to be the Professor of Military Surgery died of cholera in the Crimean War, and Lister was asked to apply for it and for the Assistant Surgeoncy at the Infirmary. Syme, though first asked Lister to settle in London which Lister did not like, then approved of his settling in Edinburgh, and to help him to go up to the "Chair of Clinical Surgery," the most important appointment in the three kingdoms, he hired the lecture rooms. On April 21st, he was elected a F. R. C. S. (Edin.) and two days later he took lodgings opposite Syme's consulting rooms. In June he went to Paris to see something of the surgical practice there but chiefly with the object of performing operations of the dead body, and returned in July to Edinburgh. In July he made up his mind to marry Syme's eldest

daughter, Agnes, which involved his resignation of the membership of Quaker, and he became a member of Episcopalian Church. He thought "true religion stands neither in forms nor in the formal absence of forms."

1855-1856, THE EARLY STAGES OF INFLAMMATION. EXTRAMURAL LECTURES; MARRIAGE AND WEDDING JOURNEY.

His first fee in a private case was for treating a case of dislocation backwards of the ankle which he reduced while the patient was under the influence of ChCl_3 . On September 16th, 1855, he made his early investigations on the early stages of inflammation. He traced the process of inflammation in the frog's foot. He describes as follows:—"By using a 2½ object glass I had a fine large field of view and had under observation always the same artery, with the field of capillaries into which it divided and the two veins which returned the blood from them. I first threw on water of about 80 degrees, which had the effect of causing the artery to contract to obliteration of calibre for a few seconds, while the flow of blood in the capillaries ceased; then followed a dilatation to a little above the natural calibre while the flow of blood was greater than natural, and after a few seconds more the natural calibre was resumed, the

warm water having previously flowed away from the web. Then I threw on successively hotter and hotter water, with the same effect except that the subsequent dilatation was greater when the temperature was hotter, till at last I used water of nearly 200 degrees and pretty long continued. The effect of this was a degree of dilatation of the artery far greater than ever before (about two or three times its natural calibre) and at first an enormously increased flow of blood; the capillary network becoming far more red than natural and each capillary coming to admit three or four blood corpuscles abreast instead of only one, but this could not go on for long, for the capillaries become distended and stuffed with the red corpuscles and the blood was first retarded and then stagnant."

The observations bearing on the early stages of inflammation continued till 1858. Consequently all his lectures on systematic surgery at this time usually ended in some pathological or physiological disquisition. He read a paper before the Royal Society of Edinburgh on December 1st, 1856, on "The minute structure of involuntary muscle fibre". He was the first who observed clearly the longitudinal fibrils of non-striped muscle cells and he was the first who studied, measured

and pictured the different forms of these cells in different phases of contraction. These important observations did not attract the attention of histologists, of even Professor Kolliker till 1895. On June 18th, 1857, he read a paper before the Royal Society of London on the "Early stages of inflammations". His conclusions have stood the test of time. Lister had never seen bacteria when he was making these investigations and then he had no conception of the part they play in pathological processes. It is a puzzle to modern pathologists that so keen an observer like Lister never detected the migration of the white corpuscles from the blood strewn through the walls of the capillaries, which was first described in 1867 by J. Conheim as an invariable accompaniment of inflammation. This is probably accounted for by the fact that his researches were confined to the very early stages of inflammation, in which the migration, if it occurred at all, would have been so slight as easily to escape notice.

Two other investigations grew out of, or were suggested by, this study of the early stages of inflammation. They were read before the Royal Society of London on June 18th, 1857. One was "An enquiry regarding the parts of the nervous system which regulate the contractions of the

arteries." The other was "On the cutaneous pigmentary system of the frog". The skin of the frog is capable of varying in colour under different circumstances. It had been supposed that the concentration and diffusion of the pigment depended upon the contraction and extension of the branches of the star-shaped cells in which it was contained; and that only these movements of the cells were under the influence of the nervous system. Lister showed that it was the pigment granules themselves and not the cells that moved, and that this movement is not merely brought about through the influence of the nervous system, but that it may be caused by the direct action of the irritants on the tissues themselves. His time was occupied much with these researches between 1855 and 1867.

Sir John Batry Duke, and Sir William Turner who was then Demonstrator in Anatomy to Gordsir, were his students. The marriage with Agnes Lister took place on April 26th, 1856. After a month at Upton, they went to a continental tour of four months visiting all the celebrated medical schools.

He met at Berlin Graefal, the great ophthalmologist who was then 30 years old; at Leipzig, he saw the eye practice of Professor Reute.

EDINBURGH ASSISTANT SURGEONCY 1856-57.

Lister and his wife returned to Edinburgh in October 1856. Very few surgeons confined their practice to pure surgery; Lister's only private practice consisted in helping Mr. Syme. He was unanimously elected to the post of Assistant Surgeoncy on October 13th, 1856. The second session began on November 15th, and he had only eight students. In December 1856 he started some experiments upon the coagulation of the blood. Mr. Syme delegated all his work on Mr. Lister in the wards and theatre.

In September 1857 he met Bowerbank, the celebrated naturalist and palaeontologist at Dublin, during the meeting of the British Association and was considerably disconcerted by an account of certain experiments by the great man on the coagulation of the blood, which threw a doubt upon his own conclusions. He repeated his experiments on his return to Edinburgh and to his great satisfaction obtained quite different results.

INVESTIGATIONS ON THE COAGULATION OF THE BLOOD, 1858-1863.

He pursued this subject with intrinsic interest because it was closely related to that of early stages of inflammation. He had before him the observations of older physiologists, the compara-

tively modern work of John Hunter, Hewson, and Astley Cooper dating from the end of the 18th and the beginning of the 19th centuries, and the theories of Richardson and Brucke, none of which appeared to account for some of the appearances he had himself observed. In November 1858 he had the mortification of beginning his lecture to one student who arrived 10 minutes late. He started a different course of lecture in surgical pathology and operative surgery. He worked at the subject of coagulation till 1891 when he delivered an address on the subject to the Medical Society of London. The conclusion ultimately reached was that "the real cause of the coagulation of blood when shed from the body, is the influence exerted upon it by ordinary matter, the contact of which for a very brief period effects a change in the blood, inducing a mutual reaction between its solid and fluid constituents, in which the corpuscles impart to the liquor sanguinis a disposition to coagulate. Beyond this he could not go. He made no attempt to explain how this influence was exerted, or how it brought about the disposition to coagulate, though he supplied some analogies from certain chemical reactions. He showed further that the healthy living vessels did not produce the same

effect as, what he called "Ordinary matter" in causing clotting, but also that this was no special property of the vessels, but one which they shared with some other healthy living tissues. When, however, the living tissues ceased to be healthy—when, for example, they became inflamed—they acted towards the blood in the same way as ordinary matter acts. This conclusion which was of great practical importance, he had reached in the course of his observations on the "Early stages of inflammation" in 1858. These observations have never been called in question, and, strange to say, with all our increased knowledge about the chemistry of the blood, we are no nearer in determining in what way ordinary matter is able to set in motion those complicated chemical processes which lead to the formation of the clot. In March 18th, 1858, he read a paper on "Spontaneous Gangrene" before the Edinburgh Medico-Chirurgical Society. The paper was pronounced to be a great success, but the audience did not follow it up. Mrs. Lister used to assist Lister in writing seven or eight hours a day. "What was then merely an influence is now an observed fact. I then inferred that as the corpuscles in an inflamed part behave as if out-side the body, probably the liquor sanguinis tended to do the same (coagulate) were it

at rest. Now I observe that when such an agent as ammonia, capable of producing inflammation is applied to a part in which the blood is at rest in the vessels, coagulation *does* take place in them. And lastly I find that the ammonia not only produces coagulation in the veins, it acts on in an amputated sheep's foot, but produces intense congestion and exudation of true lymph in the tissues on which the vapour plays. The tension in the blood in the vessels produced by the bandage answers instead of the heart's force in squeezing out the liquor sanguinis. This is, I believe, the first time that inflammation has ever been observed to occur *post mortem* in one of the higher animals".

(To be continued).

Electricity in Medical Practice—(Continued.)*

BY DR. T. N. SARKHAL, S. A. S.,
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Hospital.
General Therapeutical
Considerations.

(1) Chemical and Physical effects of currents:—

When we come to consider the medical applications of electricity,

*We understand that this article which was sent to us for publication by a correspondent, originally appeared in the *Indian Medical Record*. We regret that the source of publication was not mentioned in the last issue, in which the first part of this article was published.—(ED.)

we must begin with clear ideas of the effects which can reasonably be expected on physiological grounds, and must then proceed to inquire as to the best methods to be followed for obtaining the results desired in any given case.

The effects of electrical currents upon the body are the results either of ionic movement or of heat production

It is unnecessary to consider any mysterious "vital" effects of electricity, nor need we waste time over the notion that electricity cures through its effects upon the imagination. It is true that cures can be wrought in functional disorders by making use of electricity to terrify or to hurt, or in some other way to impress the minds of the subjects to whom such applications are given, but all that kind of business occupies a place apart from the genuine practice of electro-therapeutics, which is based solely upon Chemical and Physical considerations, and does not require the assistance of the imagination of the patient.

(2) Stimulant and Trophic effects:—

The most general of all the actions for which electricity is used is that of stimulation of the functions or the tissues of the body especially of the nervous and muscular tissues.

There still exists a widespread notion that electricity is useful only for the stimulation of paralysed limbs, and this belief has tended in the past to limit the scope of electro-therapeutics and to interfere with its progress. But although the use of electricity in motor and sensory paralysis is an important one, the stimulating effect of electrical currents in other conditions is also of great utility, so that we find it used with great advantage as a general application to the whole body for its trophic effects in states of general debility, or of defective nutrition, such as anemia, rickets, obesity, rheumatism, gout, etc. Its stimulation upon the peripheral circulation is evident from the rapid good effects which it produces in chilblains, and in promoting the absorption of effusions into joints and serous cavities.

Many kinds of electrical application produce stimulating effects. Interrupted currents, such as those of induction coil, and the sinusoidal dynamo current, influence especially the nervous and muscular apparatus by setting up small but sudden and frequently repeated ionic displacements. High frequency applications stimulate by the production of heat in the parts through which the current passes, and therefore act especially upon the vaso-motor mechanisms. The spark and discharges of the static

machine and of high frequency apparatus stimulate through cutaneous sensory nerves chiefly by minutely localised heating effects.

D'Arsonval has shown that induction coil currents by producing more or less extensive muscular contraction augment the oxidation processes of the body, but that even when so gentle as to cause no muscular contraction, they can nevertheless cause modifications in the nutritive exchanges of the body with increased production of heat and that the sinusoidal current acts similarly and produces a more marked effect. By its use the respiratory exchanges can be augmented by 25 per cent. and that without provoking any muscular contractions whatever. The result is found both in men and animals.

Modes of application:

When it is wished to produce a general stimulation of the whole body, the electric bath provides one of the best methods. The source of current should be either an induction coil or the alternating mains using a transformer and a rhythmic interrupter.

The sinusoidal current given in a full or Schnee bath has been strongly recommended in cardiac complaints where relief has been given, an improvement noted in sphygmographic and electro-cardiographic tracings (Touzey).

After the bath patient should dress slowly, in order to allow the activity of circulation in the skin to diminish during the process of dressing. If the patient dresses hurriedly while the skin was perspiring, he will feel damp and uncomfortable and will run the risk of taking a chill. With due care there is very little danger of cold after an electric bath.

The duration of bath should be for 10 or 15 minutes, and they may be given on alternative days. Twelve baths should produce signs of a good result if the treatment is going to prove useful, but in many chronic cases more than the number will be wanted.

It is usual for patients to feel tired and inclined to sleep after an electric bath, and it is as well to tell them of this beforehand, or they may take it as an unfavourable sign.

A form of general stimulation applied chiefly to the nerve centres has been proposed by Beard and Rockwell under the name of "Central galvanisation." Direct current is used. It is said to be useful in cases of Hysteria, Neurasthenia, sleeplessness, dyspepsia and other complaints.

Ionic effects:—

The effects of stimulation are best obtained by working with various currents. On the other hand the effects of ionic move-

ment require currents flowing steadily in one direction.

Ionic medication is a method of treatment in which electric currents are used for their power of setting the constituents of a saline solution in orderly motion in a definite direction from the point of view of electrical conductivity, the tissues of the body may be regarded as a saline solution, and the laws of the conduction of electricity in solutions may be applied to the interpretation of currents traversing the tissues.

With this definition in mind the ionic or chemical effects of currents may be subdivided as follows:—

(1) Ionic displacement or displacements and rearrangements of the ionic constituents of the tissues.

(2) Introduction of drugs from without.

(3) Electrolytic effects.

(1) Ionic displacements:—

In an electrolyte containing salts in solution, the ions are in constant motion, but that motion is not in any definite direction. The passage of a current through such an electrolyte causes the ionic movement to become orderly and in the direction of the Pole.

The successful employment of direct currents of large magnitude and for long times, in strains of

into contact with the suppurating surfaces and connected with the positive Pole. It is found that not only do the bacteria migrate through the solution but that a bactericidal action has taken place. Highly successful results have been obtained in this way.

"The refreshing action" of the Galvanic current:—

A peculiar effect of direct currents, which may be due to the transport of ions, was investigated by Dr. Vivian Poone. In one instance a patient after holding out his arm horizontally for a period of 4 minutes, with a weight of 17 ounces in the palm, felt great pain and fatigue in the muscles and declared his inability to go on, but was relieved at once by the passage of a constant current in a descending direction along the arm. Dr. Poone tried similar experiments on several of his friends, and they all tend to show that the endurance of the voluntary muscular action is very greatly relieved by the passage of a constant current which also mitigates or abolishes the fatigue felt during or after the effect.

Inhibition of strychnine poisoning by currents:—

Another effect of the current upon the symptoms of strychnine poisoning has been described, by Charpentier and Guilloz. They have stated that the passage of a direct current

arrests the manifestations of poisoning by the alkaloid in frogs and in guineapigs. So long as the current flows there is quiescence, although the stoppage of the current is quickly followed by the development of the characteristic tetanic spasms. By means of prolonged electrical applications death from strychnine may be prevented, as animal is kept quiet until the poison can be eliminated by the kidneys.

Effects of Static Applications:—

The effect of a static charging is to increase the frequency of the pulse and to raise the blood pressure. The effect on the nervous system is sedative, patients sleep better, and they may even show a tendency to fall asleep during the process of treatment.

D'Arsonval found a slight increase of the respiratory exchanges under the influence of static treatment. Other writers have stated that the thermogenesis of the human body increases sensibly during, and for some time after, each Franklinization.

Dr. L. Jones says, that in practical treatment it is noticed that some patients, particularly such as are weak and anæmic, experience a marked feeling of improvement as soon as the charging begins, while others, especially gouty and plethoric individuals, remain indifferent, or may even

show by their words or movements that they find it uncomfortable. It is probable that this is due to the rise of blood pressure, which is the chief physiological phenomenon produced by static applications. The blood pressure should be made the guide in determining whether static treatment should be given or not. Those whose pressure is low feel better as soon as it is raised, and derive permanent benefit, while those whose blood pressure is already high are made uncomfortable by the treatment. Bonnefoy has also noted that high arterial tension is a contra-indication to static treatment.

In pruritus, which is so often intractable to many forms of treatment, in psoriasis, in eczema and in varicose ulcers of the leg, the static brush discharge is efficacious. Albert Weil has reported a case of lupus cured by the brush discharge and static sparks. It has been noticed by Dr. Lewis Jones and by others that repeated applications of the brush discharge to the scalp seem to stimulate the growth of the hair.

In one case—, that of a girl of nineteen, under treatment for neurasthenia by static methods, the hair which at the commencement only reached to the shoulders, had after two months grown so as to reach down to her

knees. This experiment was performed by Damoglou.

Effects of High frequency currents:—

The application of high frequency currents is very useful in producing general or local tonic effects for the alleviation of pain in many conditions. The passage through the body of an electrical current which is interrupted at a comparatively low rate, is painful and unpleasant, on account of the stimulation of muscles and nerves produced by the interruptions. But it has been found that when the rate of interruption is very high, there is practically no stimulation of muscle or nerve and in this way considerable "high frequency" currents can be employed without discomfort.

Among the physiological facts observed by D'Arsonval from general applications of high frequency are an increase of the output of CO_2 noted as having been raised from 17 to 37 litres per hour; an increase of heat production, from 79 to 127 calories per hour; and an increase of nitrogen and phosphoric acid in the urine. Thus it is probable that it may have the effect of assisting in the elimination of toxins, extractive substances, urea, etc., and aid in producing improved tissue changes through more rapid oxidation. It is to this pro-

perty in the current that the improvement noted in chronic inflammatory conditions with infiltration and induration is to be attributed.

The immediate general effect is a soothing one and a tendency to drowsiness is frequently induced, the after-effect is a feeling of stimulation and vigour.

If the heart was weak or blood vessels rigid, the compensation action was imperfect, and there might be a fall of blood pressure, even of considerable amount, so that a tendency to syncope was noted in some cases of sloan. On this account it is desirable to watch the pulse when a patient, whose heart may not be sound, is submitted to high frequency treatment for the first time.

The local warming action of the currents, and vaso-dilatation which follows it have a tendency to relieve congested organs, and high frequency currents have accordingly been found useful in the treatment of piles and of enlarged prostate when the piles or the enlargement of the prostate are mainly a matter of congestion, but when fibrous and other structural changes are far advanced, the high frequency treatment will naturally be insufficient to effect a cure. For these conditions direct application of the current to the affected part is necessary, and bare metal

electrodes of suitable shape are used.

Neuritis, neuralgia, joint affections, gout, insomnia, and a host of other affections have been treated by high frequency currents, and good results have been recorded in many instances. But in general the practitioner should continually keep before his mind that high frequency currents produce local warming and vaso-dilatation, and that at present this is the only sure ground upon which to base the high frequency treatments. Moles, warts, etc, can be destroyed by actual high frequency sparks.

High frequency currents appear to have no direct bactericidal action, but there is a production of Ozone and of nitrous and nitric acids by the brush discharges of high frequency apparatus, and that these exercise a strong germicidal effect upon cultures of bacteria. A. G. Foularton and A. M. Kellus express the opinion that when an ulcerated surface is treated by the brush discharge of a high frequency apparatus the method may be regarded mainly as a means of bringing germicidal substances in the active condition into contact with the bacteria present in the lesion. Possibly the result reported to have followed high frequency treatment of gonorrhœa and in pyo-

rhœa are brought about in the way.

The morbid condition of the skin in which success has been most commonly obtained with high frequency treatment are pruritis, psoriasis, eczema, acne, sycosis and lupus.

The sparks from the metallic electrode is of value in angioma and in tubercular lupus.

Effects of Diathermy:—

The oscillations produced by the ordinary high frequency apparatus are of short duration and die away rapidly; of late years much thought has been devoted to the production of sustained high frequency oscillations because of their importance for the development of wireless telegraphy. These sustained oscillations are produced by the Diathermy Apparatus. It has been shown by Cumberbatch that the temperature of the body is raised by the Diathermy current applied medically in all its various ways. This general rise of temperature is caused by the heating not only of the fixed tissues, but also of the circulating blood and is the nature of a "physiological fever" which passes off within an hour. Accompanying this general heating of the body, there is some quickening of the cardiac action and more or less sweating, and thus increased elimination of

waste products. The effect of the current on respiration is to lessen both the intake of oxygen and the output of carbon dioxide, so tending to relieve the heat centres of the body. The diathermy current has a decided effect in lowering the general blood pressure. De Kraft writes, in the *Journal of Advanced Therapeutics*, New York, that venous congestion, wherever present, is relieved because of the marked activity of the arterial circulation. Anæmia of the splanchnic area ensues. Visceral congestion is relieved. The liver, the intestines and other organs within the abdominal cavity are made to disgorge the stagnant pools of blood which bathe their structures. When the action of the diathermic current has subsided and the blood stream returns again to its normal channels, freshly oxygenated arterial blood enters in greater abundance into the previously anæmic and venously congested areas. The parts are placed in a better state of defence against the invasion of toxins and bacterial colonies by Dr. Lewis.

In joint cases it has been tried extensively, especially in gonorrhœal arthritis, and in this it has seemed to be a very valuable mode of treatment. Good results are also reported in other forms of arthritis.

In diseases of the nervous system, neuralgia and neuritis

may be successfully treated, and relief is afforded in severe cases of sciatica. It has been valuable in many cases of chorea. It is specially indicated in conditions where the symptoms are dependent on high arterial tension, and where no marked changes in the arterial walls are present.

It is a matter of regret to say that I have got no practical experience in Diathermy as there is no Diathermy apparatus in the Howrah General Hospital.

Effects of X-Ray applications will be considered when the paper on X-Rays will be read.

I request the gentlemen present here to read the books on Action of Radium Rays, Effects of Light Rays, Special effects of coloured light; as there is no such apparatus in Howrah, so I am not keen about it.

Rickets in India.*

BY H. S. HUTCHISON, M.D., B.Sc.,
Major, Indian Medical Service;

WITH A FOREWORD BY

S. J. MURPHY, I.C.S.,
District Judge of Nasik, Bombay
Presidency.

FOREWORD.

I HAVE written this short description of the Nasik District at the request of Major H. S. Hutchison, I.M.S., who thought I was qualified to do so by hav-

*Read at a meeting of the Royal Medico-Chirurgical Society of Glasgow, held on 3rd February, 1922.

ing served in it for over five years in different official capacities, and that a statement of the conditions would help to an understanding of his research work on the etiology of rickets.

The district has a population of nearly one million. It comprises 8,140 square miles, and slopes east from 2,000 feet above sea level on the western edge of the Deccan plateau to about 1,300 feet in the inland parts. Climatically, there are two distinct areas—the “dang” in the west, which is hilly and damp, with an extreme rainfall of about 100 inches; and the “desh” in the east, consisting of open plains of black cotton soil, with a hot, dry climate. The “dangs” are inhabited by hillmen, who grow rice and the coarser millets, and live in rough huts. They are untouched by education, and are very poor. The “desh” dwellers are also agriculturalists, but are far better off. Many are literate, and their lands grow valuable crops, such as wheat, cotton, sugar-cane, and vegetables. The bulk of the population is Hindu and agriculturalist, but there is a minority of Mahomedans in all the large places.

There are few towns of any size. The principal one is Nasik, the capital; Malegaon, with about 15,000 Mahomedan weavers; Yeola, with a trade in silk; and Sinnar, which is a large market.

Chandor was once important, but is now decayed.

The district was ruled by different Hindu dynasties until the close of the thirteenth century, when it was conquered by the Mahomedans, and underwent varying fortunes. About 1762 it came under the control of the Marathas, with whom it remained till 1818, when it was conquered by the British. All the old temples were destroyed by the Mahomedans, and the present town dates from about 1760, when most of the temples were built by officers of the Peshwa's government. The town is crowded on the river bank, and is ill-built and worse drained, with narrow streets and dark houses. This crowding together is probably due to the need of protection in the troubled times of the Marathas.

The importance of the town itself and of Trimbak, 18 miles west, is due to the fact that it is connected with the legends of the Ramayana and Mahabharata, having been the site of Rama's banishment and Sita's devotion, and to the Godavari river on which it is built, this being one of the sacred rivers of India. Nasik and Trimbak are always places of pilgrimage, since they are very auspicious for performing ceremonies in memory of the dead, and to bathe in the two sacred pools—Kushavart at Trim-

bak, and Ramkund at Nasik—is a form of purification, but once every twelve years when Jupiter enters the Zodiacal sign of Leo these places are particularly sacred, and are visited by thousands of pilgrims; 1920-21 was such a Sinhast year, and 440,930 pilgrims came to Nasik in consequence.

These facts have had two immediate consequences. They have led to an unusual number of Brahmins—the Levitical or priestly class—living in Nasik and Trimbak where they earn their livelihood by attending on the pilgrims, feeding them, showing them the sacred sites, and helping them through the proper ceremonies; and to the tone of the place being extremely conservative and intensely Hindu.

The Hindu law nowhere enjoins “purdah” or the seclusion of women, and the ordinary Hindu would deny that his co-religionists practised any such custom, with a few exceptions, such as the old Maratha families and Rajputs, who most probably borrowed it as a mark of aristocracy during the long Mahomedan dominion; but, on the other hand, the Hindu ideal of a woman is that she should be pure and extremely modest. A curious illustration of this attitude appears in current politics, for Mr. Gandhi, the Hindu leader, has urged, as in favour of

congested state that prevails in a large city. Again, the climate of Nasik is mild and quite unlike what one gets in the north of India, where, in the winter, it is extremely cold. In the north one will not find the poorer classes living in the open to anything like the same extent that they do in the Deccan, and so in an investigation of this kind we would not get in the north the same differentiation in the habits of life between the well-to-do and poorer classes that we do get in Nasik and the rest of the Deccan. Lastly, in Nasik all the children were breast-fed, and this obviates the necessity of considering artificial feeding.

Among the poorer Indians the dietary is deficient to a degree judging from home standards, and it has been the universal opinion among medical men in India that rickets was a rare disease in that country. This is not what one would expect on the vitamin hypothesis, and when I came across one or two cases of early and late rickets among the well-to-do, I at once realised that, if confinement were an important factor, the well-to-do should show a heavy incidence, as the well-known purdah system is a definite custom in this class. It would be possible to take the class as a whole, since seclusion is looked upon as a mark of respectability and position, and to

compare it with another class—the poorer—in which such seclusion is unknown, for the simple reason that the women must work to supplement the earnings of the husband if starvation is to be avoided.

We find, then, a class consisting of Brahmins, well-to-do Hindus, and Mahomedans maintaining purdah and presumably eating a more satisfactory diet, and another class consisting of the lower caste and poorer Hindus, poorer Mahomedans, and untouchables or social outcasts, keeping no purdah and eating a poorer dietary. It might safely be presumed that the well-to-do class consumed a better dietary, but nevertheless a diet enquiry on the lines laid down by Atwater was carried out. This showed a striking difference in the two classes, and the results will be referred to briefly. I wish, however, to describe, as fully as I can, the purdah system, in order that those who do not know India may realise the extent of seclusion entailed by the system, and the conditions of life involved by it.

It is interesting to note that the experiments of Paton, Findlay, and Watson in 1918 were an almost exact replica of the natural conditions in Nasik. From a litter of pups some were confined in the laboratory (*i.e.*, kept in purdah) and were given a liberal diet of porridge and

whole milk; while others of the same litter were kept in the country (non-purdah) and were fed on skim milk and porridge. The former developed rickets, the latter did not. In Nasik I had the opportunity of observing the occurrence of early and late rickets under similar, but quite natural, conditions.

THE DIETARY OF THE WELL-TO-DO AND POORER CLASSES IN THE TOWN OF NASIK.

It is only to be expected that the better-paid classes should eat a better dietary, but in order to determine as exactly as possible what difference did exist an enquiry was carried out on the lines laid down by Atwater. It must be noted, however, that in Nasik breast-feeding is practically universal in all classes of the population. This is prolonged to at least a year, though it is quite common to see children at the breast up to two or three years of age. This feeding is supplemented in the case of the well-to-do with cow's milk when the child is seven or eight months old. Among poor Indians rice is used instead of cow's milk, thereby further reducing the fat intake. Such a system of infant feeding obviates the necessity of considering artificial feeding at all.

The dietary of the vast majority of Indians is largely cereal in character. The articles

of the diet are very similar among all classes, though I have found that the well-to-do eat much less cereal, and much more animal food. The following table shows the commodities of the dietary in the well-to-do and poorer classes, and the following points require notice—first, the better-paid consume 213.3 gms. of milk and 23.1 gms. of ghee (clarified butter) per head per day as compared with 23.3 gms. and 1.6 gms. respectively by the poorer-paid; second, the consumption of cereal food is much larger amongst the poorer classes.

COMMODITIES OF THE DIET—CONSUMPTION OF VARIOUS FOOD-STUFFS BY THE LOWER AND HIGHER-PAID WORKERS PER HEAD PER DAY.

Article.	Lower paid. Gms.	Higher paid. Gms.
Milk.	23.3	213.3
Ghee.	1.6	23.1
Mutton.	11.7	60.5
Dry Fish.	5.5	1.5
Eggs.	...	4.0
Bajri.	603.1	122.9
Rice.	201.1	250.6
Wheat.	73.5	160.4
Pulses.	49.3	52.1
Oil.	11.8	15.0
Sugar.	17.4	58.8
Vegetables.	92.6	129.5

Regarding the consumption of milk, all among the well-to-do consumed over 50 gms. of milk; 62.6 per cent. of the poorer-paid took none. The poorer-paid chosen for the investigation did not represent by any means the poorest stratum of society. In the very poorest the cereals form

practically the whole of the diet, with a little pulse and curry stuff added. It was extraordinary how in these classes the best physical specimens of women and children were found.

The table given below shows further details regarding the dietaries of the well-to-do and poorer classes, and in this it will

TABLE SHOWING THE AVERAGE CONSUMPTION OF FOOD AMONG THE POORER AND BETTER PAID CLASSES IN NASIK.

Particulars.	Better paid.	Poorer paid.
Energy value of diet,	2,970	3,680
Percentage of fat calories in total calories,	19.3	10.9
Percentage of cereals in dietary,	43.9	75.3
Animal protein in gms.,	27.1	9.2
Animal fat in gms.,	34.4	3.0
Animal carbohydrate (lactose),	10.0	1.0

be seen that the well-to-do consume a diet of which 43.9 per cent is cereal as compared with 75.3 per cent. in the poorer, and their proportion of fat calories in the total caloric intake is 19.3 per cent. as compared with 10.9 per cent.

It was only to be expected that the dietaries of the two classes would show some difference, but this investigation shows that this difference is very great. From the vitamin point of view, it is clear that the well-to-do eat more vitamin A, and since all the children were breast-fed, those of the well-to-do get much more than do those of the poor.

THE "PURDAH" SYSTEM.

At home the "keeping in" or seclusion of children is *much more in evidence in the poorer classes*, whose houses also do not contain rooms as large or as airy as those of the better off. *Purdah means the seclusion of women*, and it is essential that we examine closely how this affects the habits of life of those concerned, and especially so as it will be difficult for one unaccustomed to the East to picture what these conditions really are like.

To begin with, *purdah is confined to the well-to-do classes—the Brahmins, well-to-do Hindus, and Mahomedans*. Amongst the poorer and lower-caste Hindus it is never practised, though the poorer Mahomedans keep a modified form of it.

Again, *purdah among the Mahomedans is a religious matter*. A Mahomedan woman seldom leaves her house, and when she does she is carefully covered and screened from view. Omission to wear this cloak out of doors would be considered a serious breach of modesty. Hindu women do go out occasionally, but they spend practically the whole day in the house on account of the housework which they have to do, and as this seclusion is looked upon as a mark of respectability.

This seclusion is emphasised at certain times. For instance, a

widow is shut up for a year after her husband's death. At the time of labour the woman is secluded in a small curtained-off portion of a dark inner room, and she and the child reside in this for a period of from forty days to three months. This "labour room" is to be found in practically all well-to-do Hindu houses.

The seclusion of women leads to the seclusion of children. No nurses are kept, and this was my greatest difficulty in treatment, as the Brahmin invariably told me that their women-folk were too busy in the house and they themselves had not the time to take out the children. The infant gets its first walk abroad on its "auspicious" day fixed by the family priest. This seldom arrives before the child is six months old, and in one case I have seen it at a year. Once this outing is over the child rarely goes out until it can walk and look after itself.

Girls are treated as boys in infancy and childhood. At the age of 12 a girl, already married, goes to her mother-in-law's house, and there frequently becomes the family drudge. She has to work hard at cooking and cleaning, but the point to note is that she *begins the secluded life of the adult Indian woman*, and this continues till her death.

HOUSING CONDITIONS.

These notes will help the reader to understand what is meant by

purdah, and it remains to be seen under what conditions this secluded life is carried out. This involves a consideration of the housing conditions. The large majority of the houses of the well-to-do in Nasik are very unhygienic. They are old, and fortunately at the present time the newer houses are being constructed on more hygienic lines. The accompanying plan may be taken as a fair sample of a Nasik house. In this it will be noted that the side walls of the house are closed up by other houses. The front lane is only about 8 feet wide, and the houses on either side of this are about 40 feet high. On entering through a front room, one finds oneself in a dark verandah about 12 feet wide, and in the centre is a well, $8\frac{1}{2}$ feet square, which passes up the centre of the house as a narrow shaft, and it is through this only that any light can reach the verandah and rooms of the house. The absence of windows in the other rooms will be noted, and that the windowless cook-house has a small door opening into an open space a few feet square which usually contains a water-tap. It is unnecessary to emphasise that the main characteristics of such a house are darkness and absence of moving air.

In some of the houses which I visited the hygienic conditions

were shocking, and I have often had to light a match to see my way upstairs. It has always been a mystery to me how these people, educated and well-off, can live in such conditions—conditions which would only be found in the worst slums of this country. It is all done, of course, with the idea of privacy, and this idea is emphasised as far as possible by Mahomedans, whose conditions of life are really horrible. In both Hindu and Mahomedan houses, on visiting a patient, it has been necessary at times to carry him or her to the door-way in order that I could see what I was doing. In a Brahmin house in Sinnar, a town 18 miles from Nasik, the patient was lying in a room with no windows, but with two narrow, oblique slits high up in the wall to let in a little light. Though it was daylight I had to get a lamp in order to see the patient.

Such are the surroundings in which these women and children live their life of seclusion. Is it surprising that they lose their colour or that tubercle is rampant amongst them? The picture which I have endeavoured to paint falls far short of the reality, but I firmly believe that the terrible housing conditions must have a marked deteriorating influence on this class as a whole.

Seclusion thus means life under

bad hygienic conditions, of which the chief are semi-darkness and absence of moving air. Just as there was a great difference in the dietary of the well-to-do and poorer classes, so there is a great difference in the habits of life. The poorer Hindus observe no such purdah. It would, in fact, be quite impossible, as it is necessary for the woman to work in order to supplement the family income. These women usually collect and sell firewood or grass, or work at such jobs as carrying water, roofing houses, &c. The poorer Mahomedan women, except the very poorest, keep a modified purdah. They do not work out of doors like the Hindus, and they spend practically all day in their houses.

The houses are usually small one-roomed huts, far from air-tight, and with a hole in the roof for a chimney. Rough straw or matting shelters are commonly seen, and these are sufficient for the milder climate of the Deccan. The women frequently do their cooking outside. When they are working they carry their children on their backs, or more frequently place them under a shelter on the ground.

To sum up: The well-to-do classes in Nasik have a definite custom of seclusion which they follow closely, and this secluded existence is passed in houses under very bad hygienic conditions. The

rooms are dark, and the children spend most of their day in these till they can walk and look after themselves. The opposite side of the picture is seen in the poorer classes, whose women cannot afford to keep purdah as they have to work. Their children go out with them daily. Their houses are mere hovels and far from air-tight.

THE OCCURRENCE OF RICKETS IN THE NASIK DISTRICT.

An extensive enquiry was carried out in various parts of the Nasik district. These results are compared with those obtained in Nasik among the well-to-do classes. Such a comparison is valuable, as the purdah system above described does not exist in the district towns and villages, except in one place, Sinnar, about 18 miles from Nasik. The population has been divided into two main classes—first Brahmins, well-to-do Hindus and well-to-do Mahomedans, and secondly, poorer Hindus, poorer Mahomedans, and the large class of untouchables or social outcasts. The Brahmins and other well-to-do Indians in the smaller towns and villages do not practise purdah as in Nasik.

This table shows at once how prevalent the disease is among the well-to-do classes whose women live a secluded life, and whose dietary we have found to

be much superior to that of the poorer classes.

TABLE SHOWING THE OCCURRENCE OF RICKETS IN THE NASIK DISTRICT

Class.	Children Seen.	Cases of Rickets.	Percentage Frequency.
A. INCIDENCE IN NASIK FAMILIES.			
Well-to-do—			
Hindus.	277	106	38.2
Mahomedans.	49	14	28.5
Poorer—			
Mahomedans.	73	18	24.4
Hindus.	260	17	6.6

B. CHILDREN SEEN AT THE DISPENSARY.

Hindus—well-to-do.	103	40	38.8
Mahomedans—all classes.	97	30	30.9
Hindus—poor.	200	19	4.8

C. DISTRICT TOWNS AND VILLAGES

All classes—chiefly poorer.	1,566	71	4.5
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D. SINNAR, A TOWN WHERE PURDAH IS OBSERVED.

Brahmins.	131	25	19.0
Other Hindus.	89	6	6.7

E. TOTAL FOR THE WHOLE NASIK DISTRICT.

Children of—			
Purdah mothers.	1,073	268	24.9
Non-purdah ..	2,305	113	4.8

Among the aboriginal Indian tribes living on the outskirts of the district a case of active rickets could with difficulty be found. I had the opportunity of observing a large number of the women and children of these tribes at a place called Kalwan, and I could not see any evidence of rickets. The dietary of this class is very poor. Both women and children were fine physical

specimens, and burnt very brown by exposure to the sun. At another place I examined about seventy children from a criminal tribe whose poverty was such that they would eat lizards, rats, or snakes. They lived constantly in straw and matting shelters, and were almost savage in their customs. Here I got only one slight case of the disease. At the same place I saw about one hundred children of famine-stricken families, and amongst these I only got three cases. Amongst them, while the older children were thin and scorbutic, the infants were fat and plump.

Many similar instances could be given, such as the large numbers of beggars, untouchables or social outcasts, and many other poverty-stricken Indians. The dietary amongst these will be over 90 per cent. cereal, consisting of millet cakes and some pulse curry, with practically no vegetable, and rarely milk and ghee. Fat is taken as vegetable oil, and even then in small amount. The dietary would not even be as good as that of the poorer class given in the table above. Their houses are mere hovels or temporary shelters. Yet no rickets is found in this class. Near Nasik are the well-known Pandulena caves, and during the Sinhast festival last year they were visited by large numbers of pilgrims. The path from the main road to

the caves had large numbers of beggar children on it. As I walked up I looked carefully at each one, and never saw any evidence of rickets amongst them.

As regards late rickets I saw at least seventeen cases of the disease and all but one occurred in the well-to-do Hindus and Mahomedans. All the cases occurred in females, and the majority commenced between 12 and 13 years of age, i.e., just after the life of seclusion was adopted. X-ray photographs of the wrists showed the typical picture of the disease.

ETIOLOGY.

It will be seen, then, that early and late rickets both occur in that stratum of society which enjoys the better dietary, but in which the seclusion of women and children is adopted. These conditions are rarely found among the poor, whose women are not secluded. It is noteworthy that late rickets attacks females only and that the onset of the disease is closely related to the adoption of the life of seclusion. One must therefore conclude that seclusion is an indispensable factor in the causation of early and late rickets.

It is of interest to note that Brahmins have told me that they do not expect their children to walk under three years of age, and that their children walked much sooner than this in the old

plague days, when they were turned out of the city and had to reside in temporary shelters on the outskirts. In a Brahmin family which I saw, the two oldest and the two youngest had rickets, while number three escaped altogether, and I was informed that this child was born shortly after an outbreak of plague and that she spent the first eight months of her life outside the city.

Another interesting point is the occurrence of tetany. Though I saw little of this in children I saw several cases in adults, and in some it was associated with rickets. All the cases I saw were in women who belonged to the well-to-do classes, and in one family I found the mother (aged 33) and daughter (14) with late rickets and tetany, while the three younger children all had severe early rickets. This family was particularly well off. I was informed by a Brahmin friend, who was not a doctor, that his community were concerned about the frequency of convulsions at the time of labour, and when I enquired what the convulsions were like, he put his hand in the position so typical of carpal spasm. Adult tetany, therefore, seems to be a common condition in India, and, so far as I have seen it, it is restricted to the well-to-do, who suffer most from early and late rickets. It would

appear, then, that seclusion is also a very important factor in the causation of adult tetany.—From the *Glasgow Medical Journal*.

A Reaction Against The Allen Starvation Treatment of Diabetes.

To be expected because so many Physicians are inclined to out-Allen Allen.

For some time we have been looking for a reaction against the so-called "starvation treatment" of diabetes introduced by Dr. F. M. Allen, of the Rockefeller Institute Hospital, and this largely because many physicians are inclined to out-Allen Allen, carrying the treatment too far. For it must be noted that Hill and Cabot, in the Massachusetts General Hospital, who helped to place this treatment on a clinical basis, keep the patient, for forty-eight hours after admission, on ordinary diet in order to determine the percentage of sugar in the urine and to prepare the patient; then the patient is starved, except for whiskey, coffee and water, until he is sugar-free, which is never over four days and commonly only two days, when the patient is allowed a diet containing about 15 grams of carbohydrate, which amount is gradually increased to the limit of tolerance—usually 50 grams of

proteid, 50 of carbohydrate and 200 of fat, or 1800 to 2000 calories. This amounts in a day to about the following: 3 slices of bacon, 1 egg, 4 slices of parsnip, 12 heaping table-spoonsfuls of 5 per cent. vegetables (thrice boiled), a small slice of chicken, 6 slices of salt pork, 4 squares of butter, 6 ounces of cream, coffee or tea without sugar. It is seen that both proteid and carbohydrate intake is restricted, while considerable fat is allowed.

This treatment is entirely practicable in a hospital, but in private practice it takes considerable attention to be given by the physician, really almost daily attention, with constantly followed-up laboratory findings and weighing every scrap of food, which must be especially prepared.

OUR OWN EXPERIENCE.

We have seen very marked benefit from this treatment in competent hands; then the patient is returned to the care of his physician, and commonly has to go to work, when 2000 calories a day will not sustain him. The physician is "up against it" in the case, runs the calories too high, usually from allowing too much meat, and finally the patient experiences an intolerable appetite for carbohydrates and, yielding, rapidly slips back. Then another physician is consulted who starts starvation treat-

ment again and usually prolongs the treatment far beyond four days, acetonuria and coma supervene, and sometimes the patient dies prematurely. In our own experience, 50 grams of carbohydrate will not for long sustain a patient; hence we allow a little fruit and one slice of toast a day, at the same time administering a little codeine when necessary. This may not be according to the modern idea, but the patient does well and may live and work for years. Sometimes a little pure grape sugar is allowed, or even some levulose, but, heretical as it may sound, we believe that a little fruit sugar (levulose) in the form of a very little cured fruits, or, preferably, fresh fruits, rarely hurts a well-managed case of diabetes when sugar hunger becomes urgent. Understand, very little and not over once a day. It is remarkable how a little fruit will satisfy a patient. Apples contain 14 per cent. of carbohydrates and must be used with care, but peaches have only 9 per cent., strawberries 7 per cent., and melons 7 to 9 per cent. Cured fruits, such as figs, prunes and raisins, contain about 75 per cent. in the dry state, but when cooked without any sugar, may, in the absence of fresh fruit, be allowed in very small amount, say, three prunes for breakfast. Bananas are too starchy to be allowed at all.

After starvation has accomplished its purpose, and the patient has attained a fair sugar balance and is at work again, this latitude, we believe, is perfectly allowable and even advisable. At all events, our patients do well on it, and we do not believe that natural fruit sugars are nearly so deleterious in diabetes as is cane sugar.

THE IDEAS OF STERN.

Heinrich Stern, M.D., LL.D., has recently written a book entitled "Fasting and Undernutrition in the Treatment of Diabetes," in which he takes sharp issue with Allen, perhaps going a little too far in the other direction, but Stern is an able and experienced man and his ideas are entitled to respect. He does not approve of starvation at all, but does believe in fasting when indicated, as in advanced and severe forms of diabetes, though in the majority of cases he adheres to the older methods of dieting. Stern has created a bit of a sensation, but hosts of physicians will agree with him. Allen would almost make a speciality of treating diabetes, taking the cases out of the hands of the general practitioner, though he does not openly so declare.

THE BLOOD SUGAR.

Henry J. John, M.D. (*J. A. M. A.*, January 14, 1922), reports a case of starvation treatment which did not remove the sugar

from the urine, although the patient was reduced to a mere framework. In this case he found blood sugar normal, and it remained so after full carbohydrate diet was allowed for some time. He contends that there are cases of ready permeability of the kidney to sugar, which constantly appears in the urine, and yet the patient does *not* have diabetes. He has raised a very valid point. Read his article.

There is quite a reaction against the starvation treatment of diabetes, but we fear that some antitendencies, including this one, may go too far. Allen has done good work, and we are inclined to the view that it has permanent value. The trouble has been that some physicians have made a fad of starvation and carried it too far.—T. S. B. (From the *American Physician*).

NOTES OF CASES.

Sulphur in Dhobi Itch

BY S. HAMID HUSAIN, L.M.P.
Sub-Assistant Surgeon, Government House I/C His Excellency the Governor of the United Provinces' Camp and Dispensary.

When I had been in charge of Sardhana Dispensary, I came across a patient, a Hindu (Ahir) youth of a village, Khirwa Jalalpur of Sardhana Tehsil in Meerut

District (U. P.), who was said to have been suffering since last three years from itch complaints, and on examination he was found to have had a severe dermatitis with excessive irritation.

The irritation being intolerable, the patient was in the habit of constantly scratching the affected parts. He gave the history of his having had, after about the appearance of these symptoms, a few boils; and, at the time I took charge of the case, I marked several boils and small abscesses. The itching and irritation being worse at nights, he had to remain restless and awake for hours. The axillæ were extremely tender and raw.

Treatment.—To start with, the patient was put immediately on a brisk purgative, and Chrysophanic Ointment (grs. 20 to ounce one) was rubbed twice a day together with an internal administration of the following mixture:—

R]. Liq. Arsenicalis m ii.

Acid Muriatic dilute m x.

Infusion Chiretta 1 oz.

B. D. After Meals

This treatment continued for more than a week and yet the condition did not improve at all.

I should not omit to mention that I had to use even such strong applications as linimentum iodi, glacial acetic acid, etc.

I afterwards gave a fair trial again of Chrysophanic Acid, my sheet anchor in general cases, in the following way:—

R]. Chrysarobin 1 dr.

Oil Caryophylli m x.

Adeps Benzoeat 1 oz.

To be applied locally over the affected area twice a day.

I remained anxious and very attentive to stop its use as soon as any erythematous ring showed, but in vain. At last, having failed in all my attempts and finding that the patient's condition was very restless, I decided to try sulphur ointment; to my great surprise, I gathered that the patient slept and had some relief.

The patient being rather more sensitive and nervous, I stopped use of sulphur ointment and again was interested in the case. He was given an application of what is known as "Vlemingx's" solution of sulphuret of Calcium" instead, resulting in the greatest pleasure, confidence and satisfaction to the patient. This Vlemingx's solution consists of the following:—

R]. Quick Lime 1 oz.

Precipitated Sulphur 2 oz.

Aqua 15 oz.

Boil together in an earthen vessel till reduced to 10 oz.; Decant the clear sherry-coloured fluid after subsidence.

This was applied every night for three or four times and this brought about a complete and rapid cure in only six days, when I was much delighted and surprised to see the excellent results thereof.

Until two years after this I heard that the patient had no attack afterwards. This application of Vlemingx's solution proves to be an excellent remedy for all such affections, especially what is called "Dhobi Itch". The expression "Dhobi Itch", although applied to any itching, ringworm-like affection of any part of the skin, most commonly refers to some form of epiphytic disease of the crutch or axillæ.

The three species of vegetable or bacterial parasites prone to attack these situations are, the trichophytons or ordinary body ringworms; the microsporon minutissimum of erythrasma and pemphigus contagiosus. To the lay public all epiphytic skin diseases, more especially all forms of intertrigo, are spoken of as Dhobi (or Washerman's) Itch, in the belief, probably not very well-founded, that they are contracted from clothes contaminated by the Washerman. In India, besides the much-maligned Dhobi, there are many sources of ringworm infection such as what children often exhibit, dry scurfy patches of ringworm on the scalp as also red, slightly raised itching rings

or segments of trichophytons infection. Even in the absence of treatment when the cold season comes round, the dermatitis and irritation subside spontaneously. The affected parts then become dry, pigmented and scurfy and the fungus remains quiescent until the return of the next hot weather.

A case of All-male Quadruplets.

BY MAUNG SAN U, L.M.P.

PREVIOUS HISTORY.

An Arakanese lady, a Multipara, named Ma Sein Nu Oo, aged 26, was admitted into the Akyab Hospital, on the 2nd day of her confinement, i.e., 4th Jan., 1922. She belongs to Panaichaung Village, Ponnagyun Township, and was brought down on board a small canoe after prolonged labour of one night's duration. She gave birth at her place, to two males, of whom the first baby was born at midnight and lived for a couple of days, and the second at 6 o'clock the following morning and was a still-born.

GENERAL INSPECTION.

On admission the pulse was 100, and the temperature 100 deg. F. The character of the uterine contractions was tonic, due to the obstruction of the unruptured membrane, and the abdomen became extremely tender and the uterine walls so firm that

it was hardly possible to palpate the foetal parts satisfactorily. While her face was anxious and drawn and very expressive of the degree of intensity of the suffering which she had undergone, her lips were dry and sordes had accumulated about them. The tongue and throat being dry, the patient asked for a drink, in the shape of cold water.

THE VULVA.

The patient was kept in the Labour Ward and examined by the Civil Surgeon. The one thing that struck us both was that the two cords were tied respectively with an ordinary dirty string of fibres of "Thin" by which "Thinbyu" mats are made, and the free ends of which were again tied round the root of the left thigh, and her lower extremities were oedematous.

Externally, the vulva presented all signs and symptoms of prolonged labour. Vaginally, the membrane was intact and so he ruptured it artificially. About ten minutes later, the 3rd child was born dead with foot presentation. As no further contraction occurred for half an hour, she was given 1-cc Pituitrin, after which the fourth child was born dead.

THE PLACENTA.

It was common to all babies, about 10 inches in diameter and in uniform thickness, having a

thick membrane forming a sort of honeycomb with four large loculi.

THE UMBILICAL CORDS.

There were four separate cords; of which three were fairly big and were regularly and respectively inserted in the placental tissue, right in the centre of each loculus, wherefrom the fourth one was sprung from the membrane itself getting nourishment from the placenta, through the medium of a plexus of blood vessels, running on the membranes.

THE CHILDREN.

All, with the exception of the last child, were fairly developed.

COMPLICATIONS.

There were no complications at all except that the patient had a rise of temperature for six days, due to the septic condition, as a result of a tear of vaginal wall.

THE FREQUENCY.

At the Rotunda Hospital, amongst 43,000 cases of labour the relative frequency of Twins was one in 74.34, i.e., 1.34 per cent. and of Triplets one in 6340.14, i.e., 0.01 per cent. and of Quadruplets once in 366.012.

THE RESULT.

The patient made an uneventful recovery and left the hospital on the 20th Jan. 1922.

REMARKS.

I have brought forward this case to your notice as this is of

exceptional and rare occurrence in the history of the world, though there may be some cases on record.

(2) Having one and only one common placenta for four babies with four separate cords, one for each baby.

(3) Multiple births of all males (four) in succession.

(4) The Placenta with its four cords were preserved in spirit in the laboratory of this hospital.

CURRENT TOPICS.

The referendum on the use of alcohol in the practice of medicine.

Journal of the American Medical Association, Vol. 76, No. 3, Jan. 21.

Questionnaires were sent to 53,900 physicians, representing 37 p. c. of the physicians of the United States, and 31,115, or 58 p. c., were returned.

Of physicians indicating form of practice 25,889 or 83 p. c., were general practitioners; 2,401 were engaged in the surgical specialties, and 2,825 in the non-surgical specialties.

Do you regard whisky as a necessary therapeutic agent in the practice of medicine?

The total vote in all states on whether or not whisky was necessary in the treatment of disease was 30,843; 15,625, or 51 p. c., answered yes, and 15,218, or 49 p. c., answered no.

Do you regard beer as a necessary therapeutic agent in the practice of medicine?

The total number of votes cast for beer was 30,597, and of these 22,663, or 74 p. c., were negative and 7,934, or 26 per cent., were affirmative.

Do you regard wine as a necessary therapeutic agent in the practice of medicine?

The vote on wine was: no, 20,648, or 68 per cent., and yes, 9,903 or 32 per cent.

Of those who considered whisky necessary in the practice of medicine, a large majority (about 75 per cent.) used it in Pneumonia, Influenza and other acute infectious diseases. About 35 per cent. believed it necessary in the treatment of diseases incident to old age and general debility. About 10 per cent. considered whisky of value in convalescence, diabetes, heart-failure and shock. Scattering replies included Anemia, Asthma, Catarrh, Cancer, Phenol (Carbolic Acid) poisoning, Colds, Dyspepsia, Dysmenorrhea, Neuritis, Rheumatism, Snake-bite, Heart disease, Blood pressure disturbances, Toxemia of pregnancy, Aremia, Alcoholism, and Insomnia. Particularly impressive was the sincerity of the belief of a large number of physicians in the therapeutic efficacy of whisky in a limited number of diseases, but equally impressive was the expressed belief of a limited number of physicians of its necessity in a large number of diseases. Some physicians in our largest cities included large and varied lists of conditions.

The conditions chiefly cited by those recommending beer were lactation, convalescence, debility, dyspepsia, anemia and old age.

The conditions chiefly cited by those recommending wine were the same as for beer; emphasis was also laid on its use as a substitute for whisky in infectious diseases and in other conditions.—From the *Indian Medical Gazette*.

ant Surgeons. The *Indian Medical Journal*, therefore, will do well to publish transfers, etc., of the Sub-Assistant Surgeons all over India and Burma. It may occupy more space and the Editor may complain, 'It is a provincial matter or a district affair and, as such, an All-India Journal cannot do it.' But Sub-Assistant Surgeons do not have a provincial journal. The Editor is requested to bestow his personal attention and work out the matter. Then the journal will be in the hands of one and all among Sub-Assistant Surgeons. This is the surest way of increasing subscribers.

C. RANGAYYA, S. A. S.
Vinjamoor, 24th April 1922.

While we thank our correspondent for his suggestion, we regret to point out that, for obvious reasons, it is not feasible. Ed.

Our Branches at work.

Aligarh.—Copy of the resolution passed unanimously at the monthly meeting of the District Branch, Aligarh, on 21st March, 1922:—

"As the U. P. Medical Council has been addressing the medical officers registered under the U. P. Medical Act of 1917, with the prefix "Doctor", it is resolved that the prefix "Doctor" be used for all the medical

officers of the Provincial Medical Service and Provincial Subordinate Medical Service, in official correspondence, in place of Mr., Pundit, Maulvi, etc., as notified by the Inspector-General, Civil Hospitals, U. P., Circular No. 53 (Appointment department), dated Lucknow, 11th March, 1922.

Baroda.—Meeting held on 14th March, 1922, Mr. Ambalal Mohanlal was in the chair. Mr. Muljilal N. Patel read notes of cases of septic fevers treated with intravenous injections of Tinct. Iodine.

Gujarat.—Meeting held on 26th March, 1922. Eight members were present.

Resolved that the President be authorised to submit a representation to the Government of Bombay and to the Surgeon-General as regards G. R. No. 326, dated 7th March, 1922, General Department.

Dr. Ganpatram Dalsookram's bill for Rs. 60-4-0 for attending the Bangalore Conference was passed.

Sylhet.—Meeting held on 21st May, 1922. Eight members were present.

Resolved.—(1) That Dr. B. K. Nundi be elected permanent President of this Association.

(2) That a deputation consisting of the President, Secretary and Assistant Secretary of

this Association do wait upon the Inspector-General of Civil Hospitals during his stay in the station to represent the grievances of the Service regarding the modification of the revised scale of pay.

(3) That the Civil Surgeon be requested to arrange with the Inspector-General of Civil Hospitals to receive the deputation.

(4) That a copy of the foregoing resolutions be sent to the

Civil Surgeon I.-G., C. H., The Hon'ble the Minister in charge of the Medical Department, and a copy to the Editor, the *Indian Medical Journal* for publication.

Provincial Conferences.—

We have received reports of the proceedings of the U. P. Provincial Conference held at Cawnpur, and of the Punjab Provincial Conference held at Amritsar, which will be published in our next issue.

OPENED!

OPENED!!

OPENED!!!

"Royal Bact. Laboratory in Block No. 2. Sargodha."
For the comforts of Doctors and Patients.

Blood, Sputum, Urine, Faeces and Pus of all kinds examined under a high-power Microscope by an expert.

Fee Rs. 2 per slide.

Poor exempted all round.

Gentlemen are requested to make the best use of it.

Apart from it, I have also got a Royal Medical Hall with decent Stock. Surgical Instruments, Patent and other drugs, spectacles, smoke glasses, etc., supplied at cheapest rates.

Trial Solicited.

Dr. B. L. GHEI, L.M.P., *Physician and Surgeon,*
Proprietor, Royal Medical Hall,

SARGODHA. (Dist. Shahpur).

*Statement of Monthly Account of the Family Fund for the
Month of January, 1922.*

INCOME.			EXPENDITURE.		
Name of Item.	Amount.		Name of Item.	Amount.	
	RS.	A. P.		RS.	A. P.
Balance on 1st January 1922.	257	15 6	Clerk's Pay ...	15	0 0
Deposit for calls up to ...	2	0 0	P. Stamps for call 76-78...	15	10 0
55-59 ...	1	0 0	Printing charges for annual		
60 ...	2	0 0	report 11th and for calls		
61-62 ...	1	0 0	76-78 ...	40	0 0
63 ...	1	0 0	Penknife ...	0	6 0
64 ...	2	0 0			
65-66 ...	1	0 0		71	0 0
67 ...	2	0 0	Balance for 1st Feb. 1922.	267	15 6
68 ...	4	0 0			
69-70 ...	8	0 0			
71-72 ...	32	0 0			
73-75 ...	6	0 0			
76-78 ...	19	0 0			
Further call ...					
	338	15 6	Grand Total ...	338	15 6

Statement for the Month of February, 1922.

INCOME.			EXPENDITURE.		
Name of Item.	Amount.		Name of Item.	Amount.	
	RS.	A. P.		RS.	A. P.
Balance on 1st Feby. 1922.	267	15 6	Purchase of Ledger and		
Deposit for calls up to ...			Cash Book ...	28	0 0
49-51 ...	2	0 0	Clerk's pay ...	18	0 0
52 ...	2	0 0	Stationery ...	5	0 0
53-54 ...	2	0 0	Payment to Calls ...		
55-59 ...	4	0 0	Mahamad Hussein Call 75.	158	0 0
68 ...	2	0 0	John William Call 74 ...	166	0 0
69-70 ...	6	0 0	Bimalchandra Banarji call		
71-72 ...	17	0 0	73 ...	178	0 0
73-75 ...	49	0 0	Paopatlal Lalubhai Call 72.	56	0 0
76-78 ...	106	0 0	Kishorilal Thakurdus 71...	58	0 0
Further Call ...	12	0 0	Krishnaji Yeshvantkhoche		
Floating Balance ...	5	8 0	70 ...	24	0 0
Withdrawn P. Bank ...	500	0 0	Elijah Ebrahim 69 ...	17	0 0
			Gulam Mustofa 68 ...	10	0 0
			Money Order Charges ...	1	13 0
			Insured letters ...	1	11 0
			Balance for 1st March 1922.	716	8 0
				258	15 6
	975	7 6	Grand Total ...	975	7 6

S. G. PATWARDHAN,
Manager.

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[No. 6.

TYPHOID.

Very few diseases indeed there are, the method of treatment of which has come in for so much of anxious consideration at the hands of all medical men, as Typhoid fever—a disease which still claims a heavy toll of mortality amongst mankind irrespective of age or nationality. In spite, however, of the increased attention that is being bestowed on the subject, we are not in a position to say that the treatment of this disease has passed the stage of consideration and investigation. Different methods of treatment are being advocated by different physicians, each believing that his line of treatment has effected a cure. There are, again, others who believe that a routine method of treatment is the only one to be followed. We know that the treatment of this disease, like that of Diabetes, is more dietetic than medicinal. And we find that it is with regard to diet in Typhoid that a wide divergence of views is held by medical men at the present day, some advocating solid food whilst others, liquid. The present tendency of the Profession seems to be to feed Typhoid patients, and many of the advocates are enthusiastic in giving solids, their idea being to preserve the vitality of the

patient without at the same time interfering with the inflammation caused by the disease.

The Editor of the *American Physician*, in a recent issue, advocated solid food in Typhoid cases and invited the opinions of leading medical men. The replies published afford interesting and instructive reading. The general trend of the comments, we find, is in agreement with the views of the Editor. Dr. Geo. J. Boyd, M.D., of Beaverfalls, Pa., says that for the last fourteen years he has been prescribing to all Typhoid patients the same food they would have taken, had they been in their usual health, "paying no attention as to what they ate, only that they were to get what they had been accustomed to, but in greater quantities". "The results," he adds, "have been so much better than the former milk or 'sick-room slops' diets that there is no comparison between the methods". With regard to patients who are said to have died after getting the forbidden food, Dr. Boyd is of opinion that they died "from fright or shock". "As soon as it becomes known," he explains, "that he (the patient) had gotten some solid food, the frightened friends sent for the doctor and they summoned the relations, etc., and scared the patients so that he died from shock and not from disease".

Eating and digesting, it is argued, are matters of education of the cells of the body just as much as the work a man engages in, and we can no more take a patient off his regular diet without upsetting him than we can take him off his regular work and put him on a new job without trouble until he accustoms himself to his new environment. It is also pointed out that after administering solid food the patient's tongue always remains clean and the bowels move regularly with a normal stool after the first few days, which cannot be said of other methods. These sentiments are more or less echoed by Dr. James McNeal, M.D., also. "Feed your Typhoid fever patients," says he. "Insist on them chewing. Give eggs raw or soft-cooked. Everything else thoroughly cooked. Give corn-bread, light-bread, biscuit, crackers, cream of wheat, rice, tender vegetables containing no seed, tender boiled bacon, tender beef steak, tender chicken. The more water the better." He points out that if this is done, "more of your patients will get well. They will get well quicker. They will be much stronger when they get well. They will not have a ravenous appetite when they get well." Dr. Everett Walker, M.D., of Adrian, W. Va., is also an enthusiastic advocate of solid food. He says that he

has been feeding Typhoid patients for fifteen years and has never lost a case. His system is, for the first few days, while giving calomel, to give light diet, such as soft eggs, cereals, toast, eggs, etc., and afterwards to start meat, starches and a strong wholesome diet. "I boil or broil the meats," continues he, "give nothing fried or with seeds in it. Give potatoes, mashed, boiled or baked. I give my patients any kind of food the balance of the family takes except as to preparation of food, as mentioned above." A temperature of 105, Dr. Walker adds, will drop to 102 on good food. So far as milk feeding is concerned, all the three doctors mentioned above are dissatisfied with it. Dr. Boyd says that at least twenty-five years ago he became dissatisfied with milk as a diet in Typhoid fever and has practically banished it from the sick-room in all diseases. His objections are based mainly on three grounds. In the first place, he says, milk is not a liquid food; it becomes a solid food as soon as it reaches the stomach by reason of coagulation and in too many instances it remains a solid food passing through the intestinal canal and appearing in the stool in the same form. Secondly, no other food decomposes as readily as does milk. "Unless treated in some manner, which generally destroys

some of its nutrient qualities, it will scarcely stay sweet twenty-four hours." "Why," asks he "put into an intestinal canal already swarming with bacteria a food saturated with them?" And, thirdly, he contends that it is probably the dirtiest food used, as will be evident from a visit to any average farm. Dr. McNeal also enjoins, not to give milk, and points out that it tends to tympanites. Dr. Walker says that for ten years he was keeping Typhoid patients on milk and other liquid foods, "and, of course, buried my mistakes about the same as others in the practice", and that he then commenced feeding. Dr. T. J. Stockard, M.D., of Lawrenceburg, Tenn., on the other hand, says that he cannot be convinced that milk is injurious, or that it is not beneficial as an easily assimilable diet. "Milk," he points out, "is a natural food as we know, and has all the elements of nourishment and nutrition up to a certain age, and especially is it intended by Nature for the weak, feeble, digestive powers of infants." And in a real Typhoid infection, he asks, "is it not true the digestive powers are weakened by a reduction in the secretion of the gastric glands? Then why not return to the easily assimilable and digestive food we can obtain?"

We thus see that, in view of these conflicting opinions, it is indeed difficult to chalk out a definite line of treatment and dieting with regard to Typhoid fever. We can only say that as greater and greater experience is gained in the treatment of this disease it will pave the way for a thorough and complete cure. Meanwhile, it behoves every enthusiast in the Profession to make a thorough investigation and research in the treatment of this disease. We, in our humble way, desire to assist in the threshing out of this important subject and shall be glad, therefore, to devote some pages of the *Indian Medical Journal* to short contributions, and we hope our brethren in the Profession will heartily respond.

A NEW METHOD OF TREATMENT OF BLACK-WATER FEVER.

By Intravenous Injections of Calcium Chloride.

BY SAM PAUL, L.M.P.,
Sub-Asst. Surgeon, Kamaing.

Physicians as a routine prescribe Sternberg's Mixture, Soda Bicarb. and Liq. Hydrag Per-Chloride in treating cases of Black Water Fever. It is based on the assumption that this disease is an acidosis occurring in certain individuals as the result of Chronic Malignant Malaria. I do not know with what object

the Mercury is added, perhaps empirically. This mixture answers well in many cases, but there are certain disadvantages, viz.—

1. When the stomach is irritable and it cannot retain anything taken by mouth. The presence of Mercury in certain cases is more a nuisance than otherwise. It rather annoys the already irritable organ.

2. The convalescence resulting by this method of treatment is very protracted, leaving the patient a total physical wreck, sometimes ending in death.

3. This does not contribute anything to cope with the toxic Hemotogenous Jaundice, which follows as a sequel in Black Water Fever by the result of excessive destruction of R.B.C. Death is always due to toxic Jaundice and exhaustion.

The aim of treatment—

This should be (1) to combat Hemotogenous Jaundice, and (2) to make blood alkaline.

I have found by experience that in Calcium Chloride we have got the stone to kill these two birds. The value of Chlorides in Jaundice is well known and Calcium is the best alkali in the B.P. for intravenous injections.

Strength of the Solution for a single dose—

Calcium Chloride 5 grains.
Sodium Chloride 1 grain.
Sterile distilled water 6 c.c.

The injection can be given in any one of the veins of the elbow. Temperature of the patient of 102°F. is no contra-indication. This drug is only a harmless necessary constituent of the blood and as such can be given safely without producing any shock or fall of blood pressure. The only thing that is necessary is perfect surgical cleanliness on the part of the doctor and a little confidence and patience on the part of the patient.

In addition to this I give by mouth frequent sips of Soda Bicarb Solution (3i to a pint), when he can retain it. Herewith I append brief notes of six cases. In my early work (first three cases) I was following the old routine treatment by alkalies by mouth. So these may be regarded as the control cases. The later half were treated by intravenous Cal. Chloride and these may be regarded as the test cases.

Control Cases—

1. Sy. Kabirman Rai. Admitted 24th September, 1921, with typical signs of Black Water Fever. Urine dark-red coloured, temp. 102°F. on admission was oscillating till 2nd October 1921, when the urine became clear. The patient was left a complete wreck so that he could not even move from his bed. After prolonged careful nourishment and tonics he was discharged for light duty

on 10th November 1921. His stay in hospital 48 days.

2. Hav. Bal Bir Rai. Admitted for Black Water Fever. Temp. 102.2°F. was oscillating till 21st September 1921, when the urine became clear. Slow convalescence. Discharged for light duty on 11th October 1921. His stay in hospital 26 days.

3. Sy. Jit Bhadur Limbu. Admitted for B.W.F. on 11th December 1921. Urine like tar, pain in loins and during micturition. Temp. 102°F. was oscillating till 19th December 1921 when the urine cleared. Discharged for light duty on 9th January 1922. His stay in hospital 29 days.

Test Cases—

1. Sy. Rudra Bhadur Chatri. Admitted on 25th October 1921 with typical signs of Black Water Fever. One injection of intravenous Cal. Chloride was given on the 2nd day of admission. Temp. was sub-normal on 28th October 1921. Urine was clear. Discharged 8th November 1921. His stay in hospital 14 days.

2. Sy. Jai Bhadur. Admitted 8th December 1921. Temp. 102.4, one injection of Cal. Chloride given. Temp. was sub-normal on 11th December 1921, Urine cleared. Discharged 21st December 1921. Stay in hospital 13 days.

3. Lingshimi, Shopkeeper. Admitted 16th December 1921.

Urine like tar on standing. Passing blood per rectum, also pain in the loins. Temp. 102° F. Injected on the 2nd day. Urine was clear on 18th December 1921. Stools negative for amœba. Discharged cured on 26th December 1921. His stay in hospital 10 days.

Now comparing the two series, the average stay in hospital for the control cases was 33 days and the test cases only 11 days. So the latter treatment by intravenous injections of Cal. Chloride is a great advancement over the former.

Since writing this paper I had one more case who is well on the way to recovery by my method of treatment. In all my cases I injected once only each case and I am well convinced of the encouraging results.

I hope other medical men will give a trial to this method when they get cases and record their results and observations in your valuable paper.

THE DANGER OF INJECTING AIR INTO A VEIN.

BY R. S. GREWAL, L.M.S.,
*Assistant-Surgeon, Civil Hospital,
Meiktila.*

My attention was drawn to this important subject by Major Porter's correspondence in the January issue of the *Indian Medical Gazette*. Hence I place before my readers an experience

—if experience it could be called—of three years in connection with this subject. The air bubbles may be classed into three main kinds—

1. Small Size. ○
2. Medium „ ○
3. Large „ ○

During my few years' service I have given hundreds of intravenous injections for the introduction of Antisymphilitic and other valuable remedies, without any danger resulting from the introduction of an air bubble of No. 1 size. The same is, I believe, Major Porter's experience, though he does not make any mention as to the size of the bubbles injected by him. Truly has it been said by him that many of our brethren are timid to give intravenous injections, merely because of the danger of an air embolus. They have been wrongly convinced to a fair extent. They may safely inject an air bubble of No. 1 size without any ill-effect following it. I have no experience with No. 2 bubble. But No. 3 size bubble would end in death and I dare not suggest to any of my professional brethren to attempt this bubble for injection. I had once lost a patient through my carelessness in expelling air from the Salvarsan injecting apparatus and it was in the beginning of my medical career. My conclusion, therefore, is as follows:—

Air bubble of No. 1 Size—No harm.

Air bubble of No. 2 Size—Little harm (may or may not).

Air bubble of No. 3 Size—Death.

It is of no avail to enter into discussion, and one's guidance should be as dictated by Pro. Albert Carless in his famous *Book of Surgery*. (Ed. 1920. Page 382, para 2). I cite his words: "A large embolus starts in a peripheral vein, lodges in one of the branches of the pulmonary artery and may cause instant death, a smaller one is arrested in one of the smaller arteries of the lung and may do but little harm, whilst minute ones may possibly pass through the pulmonary capillaries to the left side of the heart and subsequently become impacted in the systemic vessels."

OUR LIFE.

BY I. B. CHATTERJEE, S.A.S.,
D. P.

It is only in the 19th century that knowledge of human life has attained the dignity of a genuine, independent science. The idea of life as opposite of death gives an expression of spontaneous locomotion, the beat of heart, breathing, speech and so forth as compared with lifeless nature.

About 500 B.C. Aristotle the Greek Philosopher based the theory of life as a volatile spirit (pneuma). His ideas were based on the theories of Democritus and Hippocrates. The first attempt towards a systematic physiology was made by the great Greek Physician Galenus 1,700 years ago. His researches were limited to animals which approach nearest to man. He reduces all the different functions of the body to three groups which correspond to the three forms of pneuma or vital spirit. (1) The pneuma psychicon—the soul—which resides in the brain and nerves, is the cause of thought sensation, and will. (2) The pneuma zotican—the heart—is responsible for the beat of the heart, pulse and the temperature. (3) The pneuma physicon seated in liver is the source of the so-called vegetative functions, digestion and assimilation, growth and reproduction. He specially emphasised the renewal of the blood in lungs and expressed a hope that we should some day succeed in isolating the permanent element in the atmosphere—the pneuma as he calls it—which is taken into the blood in respiration. This pneuma (oxygen) was discovered by Havoisier sometime afterwards. Galenic system ruled the medical world for 13 centuries. In the 16th

century experiments were made in that direction by a number of distinguished physicians and anatomists as Paracelsus, Servetus, Vasalius and others. In 1628 Harvey published his great discovery of the circulation of the blood and showed that the heart is a pump which drives the red stream unceasingly through the connected system of arteries and veins by a rhythmic, unconscious contraction of its muscles. His another research of importance into the procreation of animals was "every living thing comes from an egg" (*Omne vivum ex ovo*). Harvey gave a powerful impetus to the physiological observations. About the middle of last century Albrecht Haller postulated "sensitive force or sensibility" for neural action and a special "irritability" for muscular movements (*vis-vitalis*).

A certain number of these vital forces may be traced to physical and chemical causes but the others are still held to be the outcome of a special vital force independent of physical agencies. This self-contained force (archæus) unknown in inorganic nature compels ordinary forces into its service.

The famous philosopher of the 17th century, Descartes, starting from Harvey's discovery put forward the idea that the body of man is merely an intri-

cate machine and that its movements take place under the same mechanical laws as the movements of an automaton of human construction. He believed in an immaterial soul, at the same time and that its subjective experience, thought, was the only thing in the world of which we have direct cognisance. Borelli followed (1660) with a reduction of the movements of the animal body to purely physical laws. Sylvius endeavoured about the same time to give a purely chemical explanation of the phenomena of digestion and respiration. The former founded the Iatromechanical, the latter the Iatrochemical School of Medicine. Then comes the triumph of the shoe-maker's son Johannes Muller of Berlin the Creator of Comparative Physiology, 1833-1858. Muller was originally a vitalist like all the physiologists of his time; nevertheless, his idea of vital force took a novel form. The vital force was not above the physical and chemical laws, but entirely bound up with them. Muller's success was chiefly due to the fact that he began with the simplest phenomena of the lowset animals and followed them step by step to the very highest man. Hence he could reveal the hitherto unknown secrets. When the able botanist Schleiden indicated the cell as the common elementary organ of all plants

(1838) Theodor Schwann, one of the ablest pupils of Muller, extended the theory of Schleiden (cell theory) to all the animal tissues (1839).

Ernst Brucke and Albert Kolliker (pupils of Muller) have shown that "the activity of all organisms is, in the ultimate analysis, the activity of the components of their tissues, the microscopic cells. Brucke denominated the cells as "Elementary organisms" and proved that in the body of man and animals, they are the only actual independent factors of life process. By and bye the theory of a cell-soul came into existence and has been almost completely established. The reformed biological science led to a reformed pathology side by side convincing the physicians that diseases were natural phenomena like other manifestations of life. It was then that Rudolph Virchow (another pupil of Muller) conceived the idea of transferring the cellular theory from the healthy to the diseased organisms; he sought into the more minute metamorphoses of the diseased cells and the tissues they composed the true sources of those larger changes which in the form of disease threaten the living organism with peril and death. His cellular pathology (1858) turned at one stroke the whole of pathology into new and emi-

nently fruitful paths. In sickness no less than in health man is subject to the same "eternal iron laws" of physics and chemistry as all the rest of the organic world.

Much revealed, and much to be revealed yet.

LIFE OF LORD LISTER.*

BY SIR RICKMAN JOHN GODLEE,
BART., K.C.V.O., M.S., F.R.C.S.
(continued.)

PROFESSORSHIP AT GLASGOW,
1858-1860.

He was applying new principles into surgical practice and hid in the artery in a case of recurrent palmer hæmorrhage instead of amputation as used to be done in those days.

He was able to decide on the part where the amputation ought to be done by making an incision into the leg, and finding appearances in the tissues which could have been produced only by the direct violence of the accident although the exterior surface was natural in respect. He took greater pains to explaining the fundamental doctrines of Surgical Pathology to his class. Two days in the week students are to operate and apply apparatus, etc., themselves before their fellows. In 1858 he read before the Royal Society a paper on the "Functions of the Visceral

* An Extract sent for publication by N. S. Narasimhan, L.C.P.S. (Bombay), L.M.P. (Madras.)

Nerves and the Inhibitory System". He was re-elected to the Assistant Surgeoncy in Nov. 3rd, 1858. His opponent was Dr. P. H. Watson who later on developed into an operator of exceptional brilliancy.

On April 10, 1859, Dr. Brown Sequard and John Hughes Bennet, Physician and Physiologist, saw some of the frog experiments of Mr. Lister after lunch. His paper on the coagulation of blood was translated into German. On August 1st there was a prospective vacancy of Regius Professorship (patronage of Crown) in the University of Glasgow. (This is the case in all continental countries, America and in U.K. except in London where the Faculty selects) on account of ill-health of Dr. Lawrie who had some surgical practice also. The emoluments will be £400 to £500 per annum with some guaranteed practice. He had very little practice at Edinburgh. There were seven candidates, five from Glasgow and two from Edinburgh and a lot of local mischief was done. The appointment of Lister was made on January 28, 1860.

Syme spoke of Lister as follows:—"He has a strict regard for accuracy, externally correct powers of observation and a remarkably sound judgment, united to uncommon manual dexterity and a practical turn of mind." Lister's first sojourn at

Edinburgh lasted nearly seven years. It ended with regretful congratulations from students and the presentation of a silver flagon. There was also a complimentary dinner, attended by a large number of his professional brethren and others. This was presided over by Dr. MacLagan. Lister made at this time his first non-professional speech. "For us the *verum* will ever be the *decens*. Scientific truth as bearing directly upon the well-being of our fellow creatures, will always be a becoming object of our pursuit; and while probably there is no calling in which there is greater opportunity than in ours, yet when we consider the sacred interests which are committed blindfold by the public to our trust, we must allow that there is no calling in which falsehood is more unbecoming or more despicable; and I hope that the memory of this evening will be an encouragement to me to shun all tortuous paths and to pursue a straightforward course of integrity".

GLASGOW PROFESSORSHIP.
SURGEON TO THE ROYAL INFIRMARY. ARTICLES ON
AMPUTATION. ANAESTHETICS.
1860-1862.

For a year he was in the anomalous position of being a Professor of Surgery without a hospital appointment, but soon he

was busy with private practice. At this particular time the old University building was condemned to be pulled down and it was during Lister's residence that the present fine structure was raised on the commanding ridge of Gilmore Hill. His congenial colleagues were his fellow students Dr. Gardner, Professor of Medicine, and Allen Thompson, the celebrated Anatomist, T. Barclay the Principal, Sir William Thompson, afterwards Lord Kelvin, the Professor of Physics and the brother-in-law of Tennyson, Edward Law Lushington, Professor of Greek. During his stay of nine years at Glasgow he took his full share in the removal of the University from its old to its new quarters. He delivered his introduction address in Latin on March 9, 1860, on the "Teaching of Surgery". No one understood Latin except Allen Thompson, but he was heartily cheered.

He was appointed examiner of Surgery for the degree for the year. The session opened in May and Lister gave up speaking from notes. Ever afterwards all his systematic clinical lectures and public addresses were all given extempore. His first lecture dwelt on the value of anatomy and physiology to the Surgeon and on the importance of making serviceable amputation stumps and closed by stating

two great requisites for the medical profession. "First a warm loving heart, and secondly, truth in an earnest spirit". The number of students was 182, the largest class in Systematic Surgery in U. K. and in Europe. In November 1861 he was appointed Surgeon to the Infirmary. His class examinations were conducted in an extraordinarily complicated and conscientious scheme which was not followed by the other Professors as "it is high, I cannot attain unto it".

In August, 1861, he contributed an article on "Amputations" in Holmes' "System of Surgery" which ran up to three editions in 1883. The article of 1883 was a good deal different from that of 1861 and has incorporated all the advances of knowledge of inflammation and suppuration. Lister was the only contributor outside London for this system of Surgery. Important additions to surgical technique first introduced by him must be mentioned. (1) He described a new method of amputating in the neighbourhood of the knee, which he called a modification of Mr. Cardens with a long anterior flap. It was really quite original and holds its place at the present time as probably the best operation in this situation. (2) He mentions a tourniquet which he had devised for controlling the abdominal aorta, especially in

connection with the amputation of the hip joint. He discarded it later on in favour of elastic pressure, but for Symes' operations Lister used the tourniquet and it was very efficient. (3) The third innovation described in the article on amputation was a method of bloodless operating devised by him in 1863-64 which allowed a greater accuracy in all operations in the extremities and greatly diminished the loss of blood. It consisted in elevating the limb for some minutes, and then rapidly securing up the tourniquet, not upon a pad which simply controlled the main artery, but without the pad so that the whole circulation of the limb was stopped. Lister showed that the bloodless condition of the parts was not a mere mechanical result of elevation, but that the sudden emptying of the veins caused a reflex contraction of the arteries. This very important advance in surgery made little impression till many years later, when Esmarch's method of emptying the limb by the purely mechanical process of squeezing the blood out of the part by means of an elastic bandage was introduced. Lister adopted the India-rubber band which Esmarch wound tightly round the limb before removing the elastic bandage, because it was easy to apply but continued to follow his own plan of elevat-

ing the limb in order to render it bloodless. The experiments were conducted by "making the blood write its own record by means of a stream issuing from a minute orifice in a tube tied into an artery, the projected blood being allowed to fall upon a horizontal sheet of paper drawn smoothly past the animal. By such an arrangement the effects of the varying degrees of pressure of the blood could be observed untrammelled by any resisting apparatus". These actual tracings are still preserved in the Museum of the Royal College of England.

In the pre-antiseptic days silver wire in place of silk stitches was introduced by Marion Sims. Lister invented what was called a wire needle; they have now fallen into disuse. Lister's article on "Anæsthetics" was an important contribution. He favoured the open method. He urged that pulse need not be attended to. The Edinburgh teaching is still accepted. Till 1870 there was no death in the Royal Infirmary at Edinburgh or Glasgow although the students (senior) administered the ChCl_3 . He next discussed the question of "shock" and maintained that complete anæsthesia is necessary to prevent it. He also explained the two varieties of stertor, palatine and laryngeal, by means of observations on his own

larynx, carried out in an ingenious manner with a laryngeal mirror and a looking glass. He was the first to show by what mechanism laryngeal stertor, which is often the warning note of the approach of danger, is relieved by pulling the tongue out forcibly, and he mentioned cases where he considered he had saved lives by this means in his own practice and that of others. These observations are not referred to in any modern treatises on anæsthesia.

CANDIDATURE FOR AN EDINBURGH PROFESSORSHIP. DEATH OF LISTER'S MOTHER. IMPROVEMENTS IN PRACTICAL SURGERY. 1862-1865.

Fifty years ago the Professor of Surgery taught Ophthalmology. To-day a general surgeon who practises, or professes to have a knowledge of Ophthalmology is almost unknown. In June 1864, James Miller, Professor of Systematic Surgery, Edinburgh, died, and Lister applied for the post, but his opponent, Mr. Spence, was appointed for the same. In September of that year Lister's mother died. In November, 1864, he used a simple instrument for the removal of F.B. from the ear. Its curved shape permits the end to be passed with perfect ease between the wall of the canal and the round body, and then a turn of 45 degrees

places the end of the hook under the object and is pulled out with the utmost ease. This instrument is now little used and will probably be re-introduced. The year 1865 will always be associated with Lister's greatest discovery. Inflammation and suppuration, and general unhealthiness of his wards occupied his attention. In the *Lancet*, Vol. 1 of 1865, he published his paper on "Excision of the wrist for Caries" and had devoted much time and thought during the preceding two years. Excision of the wrist had been followed by remarkable success, but that of the wrist, though first named by a German Surgeon, Dietz, in 1839, and subsequently by Heyfelder in 1849 and many others, had not proved encouraging, and amputation was in the early sixties considered to be the appropriate treatment for Caries (*i.e.*, Tuberculous Disease) of the wrist. The complicated technique which he ultimately recommended was the result of careful anatomical study. This has now become a classical operation.

HOSPITAL DISEASES.

The use of poultices was common before 1865. Operations were then few because a large—perhaps the larger—part of human body was held to be beyond the province of Surgery, and was handed over to the tender mercies of the physicians.

Abdominal Surgery was hardly thought of except Ovariectomy by Spencer Wells and Keith in whose skilled hands the mortality was then 30 per cent. (now five per cent.). Only one operation was performed on thorax for Empyæma. Spinal canal and the cranial cavity were unexplored regions. Occasionally the skull was trephined for fractures or for abscesses of the brain, but they were seldom successful. Amputation was frequently performed and conservative Surgery was almost unknown. Wards had to be frequently closed, hospital buildings pulled down. The nature and prevention of septic diseases now occupied the first place, the development of surgical technique only a secondary position. Now the whole world knows that the majority of the diseases of the human body were due to microbes. At this time they were hardly spoken of, they were not recognised as enemies but considered as microscopical curiosities. Erysipelas, Pyæmia, Septicæmia and Hospital Gangrene were called hospital diseases in an epidemic form in hospitals and less commonly Tetanus and spreading Gangrene. Now the first three are not seen in a hospital itself except as outside admissions, and very few living surgeons have personal experience of hospital gangrene (except in a military practice).

As early as 1872 Lister thought tetanus was of microbic origin because it became less frequent in Edinburgh after the banishment of hospital diseases. When the tetanus bacillus was discovered he made another suggestion of almost prophetic nature, *viz.*, that the organism flourished best in suppurating wounds. They all allowed more cubic feet and attended to cleanliness of the wards. But even in the cleanest wards one or possibly two jugs and basins and a few towels were considered sufficient, and nothing more than soup and water possibly tinted with a dash of Condys fluid was used to purify their hands. No more efficient means were employed for the cleansing of instruments including the common probe which circulated from patient to patient, or for washing the marine sponges, which were then in common use. Nurses except those influenced by Florence Nightingale were not neat and clean. No attempt was made by the Surgeon to satisfy the proprieties. The House Surgeon used to have an old coat in the lapel of which he carried a wisp of ordinary whiplash for tying arteries. This garment did duty for a year. The Surgeons' operating coats lasted from year to year and eventually acquired an incrustation of filth of which the owners appeared unconscious

and even proud. There was no segregation of hospital diseases. Dusty pictures lined the walls. The sanitary arrangements were primitive. House Surgeons used to make the *post mortem* examinations and they used to assist at operations after slight purifications. Operations of expediency were seldom performed. With regard to the cause of hospital diseases, the state of the mind of the Profession was one of doubt and uncertainty. A polluted atmosphere seemed almost essential to their existence. Some of the most clear-sighted saw that it could not be simply the oxygen, or the nitrogen in the air which did the mischief. John Hunter and Abernethy and afterwards Lister did not fail to notice that, if air entered the pleural cavity through a small wound made in the lung by a broken rib (traumatic pneumo-thorax), or if it became diffused through the cellular tissues of the body from a similar cause (surgical empyæma), no inflammation occurred and no trouble followed beyond the mechanical inconvenience due to pressure of the air in abnormal positions. Inflammation never occurred unless the lung was in a septic condition. This was not recognised and understood by all. At this time on account of the powerful advocacy of Sir James Y. Simpson, the hospital construction underwent a thorough

change. The pavilion system replaced the corridor system. Many of the older surgeons were then beginning to be much upset by the new views about microbes. There was a very great controversy. The storm-centre was Lister and his band of disciples. Many of those pioneers whom succeeding generations glorified as heroes, have sunk under the burden of perverse misrepresentation and neglect. Such was Ignaz Philipz Semmelweiss whose sad career came to a close in Vienna in 1865, the very year we have just reached in the history of Lister. He offered the true explanation of puerperal fever which is neither more or less than blood poisoning occurring in connection with child birth.

Semmelweiss was a Hungarian born in Budapest in 1818. In 1846 he was assisted in the huge Lying-in-hospital in Vienna to which about 7,000 women were admitted annually. It consisted of two divisions. In the first, the male students attended, while the second was reserved for the instruction of the midwives. In the latter the mortality was invariably much less than in the former, 3.38 per cent. as compared with 9.92 per cent. over an average of six years (1841-1846). Sometimes the monthly average reached the appalling number of 25 to 30 per cent. This made Semmelweiss very unhappy.

Then one of his colleagues died of Septicæmia following a poisoned wound received whilst making a *post mortem* examination and Semmelweiss recognised that the disease was identical with puerperal fever and due to the same cause, infection from without—in this case infection from a dead body. "In any excited state of mind," he says, "it flashed across me with irresistible clearness that the disease of which Kolletschk had died was identical with that from which I had seen so many hundreds of lying-in-women perish". His first theory, or as he called doctrine, was that infective material from a dead body was the only cause of the disease, and he at once reduced the mortality in the first division below that in the second by careful disinfection of hands with the best known antiseptic chlorine water or chlorinated lime. He soon extended his doctrine. It was "that puerperal fever was caused by decomposed animal organic matter without regard to its origin, whether from the dead body or from a living person affected with the disease which produced a decomposed animal organic matter". Semmelweiss was loath to publish and his pupils Rohitansky, Skoda and Hebra took up the cause of the spread of the doctrine, but they unfortunately insisted on cadaveric infection Semmelweiss

was persecuted and left Vienna to Budapest where he published his work in 1861 which increased the bitterness of his opponents. His mind was unhinged and in 1865 he died in Vienna of blood-poisoning. Even the judicious Virchow sneered at him; it is a tragic story.

The amplification of his doctrine and the demonstration of the true cause followed immediately after his death, and was brought about by the continued labours of Lister and Pasteur. Even the gynæcologists have forgotten the lesson they were taught and they learned it again once more. Lister did not hear of Semmelweiss' work even from Rohitansky during his continental tour. Even such intimate gynæcological friends as Keith, Mathews Duncan, and Spencer Wells, all keenly interested in the application of antiseptics to their particular field of practice, did not bring to the notice of Lister Semmelweiss' discovery. But in 1904 the memory of Semmelweiss was commemorated by a bust and was claimed as the "father of modern surgery".

METHOD OF WOUND TREATMENT IN THE MIDDLE OF THE NINETEENTH CENTURY.

Healing by second intention was the rule. They wanted to imitate nature: (1) process of

healing by scrubbing, as applying caustics, (2) open method (in Germany), occlusion method by collodion (in America) which was serious as it did not allow drainage.

Mr. Syme saw that the third was used in Edinburgh. Later on he advocated immediate closure with the application of free drainage and the application of pressure to the bottom rather than the outlet of the wound. Lister practised this till 1862. Robert Liston, Symes' friend, in 1834 introduced lint soaked in water to the wound both before and after closure. Water dressing was the usual dressing in University College Hospital up to 1870. Poultices of bread and linseed meal were commonly used. At one London Hospital, at least, the poultice was the favourite dressing far on into the eighties of the last century. Irrigation and water bath also were used mostly in Germany. Drainage tubes made of various materials are figured in old books on Surgery. Benjamin's bells leaden tubes were forgotten and Chassaignac's India rubber tubes, now so largely used, were not accepted then. Only four to six artery forceps were in use even for a large operation and hence hæmostasis was not good. The ligatures came direct from the manufacturer and used; but not cut short; they used to slough

off. The interspaces among threads became filled with clot and the result was a solid cord, rather a system of capillary tubes. Small vessels were not cared for and it is an every day occurrence to open the wound and squeeze the blood out. The expectation that drainage would be promoted by placing the stitches far apart was never realised. When this was the condition of surgical practice Lister was attacking the problem in his own ward at Glasgow pondering over the fact that the unbroken skin provided a protection that no dressing yet devised could with certainty imitate. This ward still occupies a corner beneath the shadow of the great new infirmary at Glasgow, but is to be religiously transplanted stone by stone to the grounds of the University, there to stand as a monument in *sæculo-sæculorum*. From 1830 to 1857 Stromeyer Adams practised subcutaneous surgery with the object of eliminating the dangers of exposure to air. Then Langenbeck practised subcutaneous osteotomies, Abernethy practised valvular incisions. Adams attributed inflammation to the irritating influence of oxygen. Antiseptics also had been used from time immemorial.

Myrrh, Tr. Benzoin Co. Alcohol, Glycerine, Chlorine, and its compounds, Chloride of Zinc, Tr. Iodine since 1811, Coal tar

in France since 1815, and Acid Carbolic was discovered by Runge in 1834. It attracted no notice, however, till 1841. Creasote, Coal tar powder Corne's powder to be used as paste, Calvert's use of carbolic for preserving dead bodies and Jules Lemaire's (chemist) use of Carbolic acid as a preservative and his shrewd thinking that putrefaction was of microbic origin did not attract any attention. But it must never be forgotten that with two exceptions Semmelweiss and Lemaire, Surgeons, employed antiseptic substances not in the hope of preventing the occurrence of putrefaction, but with the object of neutralizing its effects after it had developed by natural processes which it was supposed to be impossible to counteract. Semmelweiss certainly attempted to guard against infection by applying his antiseptic to the chief means of transference of the poison, namely, the hands. Lemaire apparently had no such definite mode of attack. He worked indefinitely.

FERMENTATION AND PUTREFACTION.

In 1865 Lister was trying some experiments with Carbolic Acid, etc., upon healing sores and wounds. These investigations were never published. Lister in these days was not a wide reader of continental scientific literature.

But in 1865 his colleague, Dr. Thomas Anderson, Professor of Chemistry, drew his attention to the work and writings of Louis Pasteur. He now learned from Pasteur's writings that putrefaction was in fact a fermentation, that it was caused by the growth of minute microscopical beings which were carried far and wide by dust floating in the air, and that it was possible to free the air of this dust by filtration, or heat, or by other means. From this he thought that the air before it gained access to the wound should be purified. It did not escape such an acute observer as Pasteur that the atmosphere was not the only vehicle of mischief, that germs not only people the air but are carried by it to all solid and liquid substances, and therefore will be found adherent to the hands of the experimenter, to the insides of bottles, to corks and even to such unlikely materials as Hg. Pasteur also clearly showed that certain natural substances as blood and urine are free from micro-organisms. In 1862 he delivered the verdict that "spontaneous generation was a chimera". Lister's simple creed founded on Pasteur's teachings, and which for the moment he held with profound conviction, was that vibrios caused putrefaction and that they peopled the air in overwhelming numbers. He

could not have guessed that many different organisms had the power of producing decomposition. He had no suspicion that micro-organisms had any other means of access to the living body than through open wounds.

THE ANTISEPTIC SYSTEM.

1865—1867.

Now the researches of Pasteur led him to infer that decomposition in the injured part might be avoided without excluding the air, by applying as a dressing some material capable of destroying the life of the floating particles. The difference in the behaviour of simple and compound fractures had always impressed Lister (just as a corked and uncorked bottle). So Lister applied first his principle in the treatment of compound fractures. He left untouched for a time the more simple question of the treatment of abscesses and incised wounds made by the surgeon. He began to destroy the germs already in the wound; he purified his hands and instruments and any other material likely to come in contact with the injured surfaces. His experimental treatment of compound fractures was in the following way in March, 1865. After cleansing the broken limb and squeezing out as far as possible all clots of blood, a piece of calico or lint soaked in undiluted Carbolic

Acid, and held by a pair of forceps, was introduced into the wound and passed freely in all directions, in order to destroy the germs that had entered either at the time of the accident or afterwards and might be lurking in deeper parts. A piece of lint similarly soaked in the acid was then applied to the wound, just large enough to overlap it in every direction by half an inch. This was covered by a slightly larger piece of thin black tin or sheet lead, the object of which was to prevent the evaporation of the antiseptic. The dressing was then fixed in position by strips of adhesive plaster, and some suitable absorbent material was packed round between the limb and the splints for the purpose of soaking up any blood or discharges that might escape. The blood and Carbolic Acid soon formed a tenacious crust or thick paste which was not removed for some days, but its antiseptic properties were renewed from time to time by painting some more of the undiluted Carbolic Acid on its outer surface after removing the metallic plate for the purpose. This primitive dressing was quite irritating. So, as the crude oil did not dissolve in water, he got pure Acid Carbolic, which was soluble in water and oil. He preferred an oily solution as it did not part with the oil readily. The first oily dressing was simply lint

soaked in carbolized oil, which, though effective enough, was found to have many disadvantages. The second, arrived at after many experiments and disappointments, consisted of putty made of common white carbonate of lime and a solution of Carbolic Acid in linseed oil (one in four or one in six).

The treatment of compound fractures turned to be as simple as simple ones, and in October 1866 he began to apply the treatment to abscesses. The plan adopted was to place a piece of lint soaked in carbolized oil (one part in four) over the part to be operated upon for sometime before the abscess was opened. This purified the surrounding skin. The knife was dipped in the same oily solution, and, when the incision was made, the matter was allowed to flow away beneath the protecting veil of oiled lint. Thus if air were sucked back, it was brought under the influence of Carbolic Acid, by which its germs were destroyed. Just as in Schwann's or Pasteur's experiments with bottles they were destroyed by heat or separated by filtration. The putty dressing was then applied and changed as occasion required. Most of the abscesses thus treated were chronic abscesses connected with diseases of the spine or other bones, at that time a most unsatisfactory

and often fatal class of cases. The results were such as had never been obtained before. He began to treat successfully joint suppurations by this method.

The epoch-making paper, which recorded Lister's first observations on the antiseptic system of surgery, appeared in the *Lancet* between March and July, 1867; it bore the title "On a new method of treating compound fracture, abscess, etc., with observations on the conditions of suppuration". Only one of eleven compound fractures died; one lost the limb in this series. This quickly attracted the attention of the medical world. The following new pathological facts came to light in the course of his investigations: (1) That an antiseptic clot which had once contained Carbolic Acid could, if undisturbed, be organized into living tissue by the growth into its substance of cells and vessels from the surrounding parts. (2) That a piece of bone that has died may be absorbed in an aseptic wound by the granulations that lie in contact with it.

In August, 1867, he read a paper before the British Medical Association at Dublin, "On the antiseptic principles in the practice of Surgery". He began treating incised wounds by Carbolio lotion 1 in 20 since April

1867. Now he began to leave the ligatures cut short to be absorbed.

FIRST RECEPTION OF ANTI-SEPTIC DOCTRINE.

SIR JAMES SIMPSON AND LÉMAIRE. MISCONCEPTIONS. 1867-1868.

Many did not understand the principle but thought that Lister discovered the use of Carbolic Acid which was, no doubt, used before. Such a clever man as Sir James Y. Simpson was one of the powerful opponents of Lister. It was a mortification to him that his own method of acupuncture to stop hæmorrhage and thus to prevent decomposition was not adopted by Edinburgh and Glasgow though used at Aberdeen and that the antiseptic principle was a death blow to acupuncture. He attacked the antiseptic system and its inventor from this time forward with prolonged and consistent animosity. Simpson's attacks were a thrust below the belt and attention was rivetted upon Carbolio Acid and not upon the antiseptic principle. The phrase "Carbolic Acid treatment," sometimes shortened to "Carbolio treatment," was on every one's lips, to Lister's mortification and disgust. London Surgeons did not follow Lister's methods at all.

CANDIDATURE FOR A PROFESSORSHIP IN THE UNIVERSITY COLLEGE, LONDON. VISITS FROM ABROAD.

ELABORATION OF THE ANTISEPTIC TREATMENT. 1866-1869.

In 1866 he applied for a vacancy to the University College, his own *Alma Mater*. His opponent, John Marshall, was elected. 1868 drew visitors from Petersburg, New York, from Thiersch of Liebig, and British Surgeons as Joseph Bill, McCormac, Croft, Berkley Hill, and Marcus Beck. On the 5th July, 1868, Lister removed loose cartilage from knee joint with success, and Beck was horrified. At this time this procedure was thought to be criminal on account of the risks. Lister's faith in his new system was so great now that he performed on his own "sweet sister", as he called her, a dangerous operation not hitherto performed by anyone for a mortal complaint with success. His students became faithful disciples and Hector Cameron Sir Lewis, his House surgeon and assistant (then Professor at Glasgow), was one of the greatest exponents of antiseptics. Lister recognized from the first that antiseptics, in so far as they damaged the tissues, were evils, though necessary evils, and even at this time he was trying how far it would be possible to dispense with them.

From the same point of view—that of preventing the antiseptic from continually stimulating and irritating the wound—he introduced what he called a protective. This was a material unstimulating in itself and impervious to Carbolic Acid. The intention was to place a piece of protective of limited size, in immediate contact with the wound, in order to protect it from the irritation of the dressing which overlapped the protective widely on every side. After rejecting many protectives, Lister tried oiled silk, which when dipped in Carbolic lotion in order to destroy all germs adhering to the surface before applying it to a wound, the lotion ran off. Lister thought that there was a chance that germ-bearing dust might settle on the dry surface in the momentary transit from the basin of the lotion to the wound. He, therefore, coated the protective with a layer of dextrine and starch, which ensured a complete and uniform wetting when it was dipped in the lotion. Thus prepared the protective is obtainable even at the present day and is still used in certain circumstances by those who understand its purposes and its importance.

He began to experiment to get at an improved dressing which will hold Carbolic Acid which should not be taken away by the discharge. He tried various things.

These plasters were the ordinary antiseptic dressing till 1870, when Lister discarded dressings intentionally devised for the purpose of not absorbing discharges in favour of those which absorbed them freely.

(To be concluded in the next issue.)

ARE NOT REMEDIES FOR ORDINARY AILMENTS UNDULY NEGLECTED?

Active Drugs Fallen into Disuse.

Old Medical Literature deals with many drugs empirically, ascribing curative powers to many substances that modern science shows are possessed of little definite activity. Yet science may overlook an important point in drug activity, even as science ascribed no value to the tomato as a food while blissfully ignorant of the role played by vitamins and that the tomato is rich in these substances. It is wise for the scientist to be becomingly modest and to make an effort to explain why the clinician finds value in certain remedies concerning the activities of which science affords no light.

It is not to be wondered at that many undetermined remedies have fallen into disuse, and it is probably true that a large number of them never will be justified because actually possessed of

no essential remedial value; but it is not that phase of the matter that we wish to discuss, but, rather, to direct attention to certain drugs of defined physiologic activity and that have, for various reasons, failed to obtain general favor in the eyes of the clinicians.

Arnica.

Arnica in moderate doses slows the pulse and slightly raises the blood-pressure, while in larger doses it stimulates the vagus nerves and toxic doses paralyze these nerves; it is also a gastro-enteric irritant.

The vagus may be involved from neoplasms on the floor of the skull, from the toxins of syphilis or diphtheria, or by alcoholic excesses, for instance; but muscarine and pilocarpine also stimulate the vagus, as do other drugs, especially the anesthetics; but the action of arnica is so uncertain, and in adequate doses it is so irritating, that when vagus stimulation is necessary it is better accomplished by drugs with less irritating qualities than by arnica. Here is a drug which has been recommended in a host of conditions, and which really does possess definite activity, yet with the extensive drug resources of modern times available arnica is going out for the simple reason that it is unnecessary.

Pomegranate.

This is an exceedingly unpalatable drug which is usually vomited if administered in adequate dose, and it is quite toxic; yet there is no doubt at all that it possesses a specific toxic action on tapeworms, a solution of one part of its proximates in ten thousand in ten minutes causing their death. The drug contains four alkaloids naturally combined with tannin, in which the drug is rich; and pelletierine tannate has displaced the crude drug almost entirely, for this modern substitute for the crude drug, is almost insoluble in the stomach. Here is an instance wherein a drug with valuable properties is *too disagreeable to use in the crude form* and had almost passed out until its *active principles* became available.

Sparteine.

This drug belongs to the uncertain coniine group; it paralyzes the respiratory and motor centers, as well as the pneumogastric, when given in large doses. The long use of sparteine as a heart remedy is not based on any proved action on the heart, and its use therein was probably based on the definite diuretic action of scoparius, from which sparteine is derived. We know now that it is the scoparin in scoparius that is diuretic, not the sparteine, and sparteine is rapidly

peutic wreckage and nihilism behind; sixth, erratic and extreme claims for a drug turn the profession against it, whereas conservative claims may establish a proper place for the drug; seventh, a toxic drug may be used in excessive dosage, thus bringing it into disrepute, whereas proper dosage may show the great value to clinical medicine of a toxic agent; eighth, a drug may be so depressing that physicians are justly afraid of it, and lastly, the pharmaceutical preparations of a drug may be unreliable and thus an intrinsically useful remedy be neglected.—*The American Physician*.

Vitamins and Fresh Food.

By T. C. DRUMMOND.

Reader in Biochemistry, University of London.

Since the remarkable discovery was made by Professor Gowland Hopkins in 1912 that minute traces of certain unidentified constituents of fresh foods are absolutely essential for health there has been an ever-increasing interest in these substances, which are now generally called vitamins, or accessory food factors.

At the present time we find that this interest has extended beyond scientific circles to the man in the street, and frequent references to the subject are to

be encountered in the lay Press. Unfortunately, much of the information which is being given to the public in this manner is inaccurate. As an example may be mentioned a recent popular article on vitamins which contained the extraordinary statement that modern research had showed that it is impossible for a young animal to thrive on a diet of eggs or milk alone. It is difficult to know where the author of this article obtained such remarkable information, and how he would explain the fact that most young mammals are dependent for a certain period of their life on milk alone.

Misstatements such as this cause much harm; but this is not the only source of danger. There is always the risk that a discovery of far-reaching importance to human life will be magnified and distorted beyond reason. Two recent examples of this we have in the history of radium and of immunity, and only slowly, after many years, is sound scientific opinion counteracting these processes and enabling the subjects to be viewed in their right perspective.

To-day there is a swing of the pendulum in the direction of ascribing too much importance to the vitamins. This is not to say that these substances are of less importance than the original discovery of Hopkins indicated,

but rather to guard against an impression gaining ground in the minds of the general public that vitamins are elixirs of life.

It would be the height of folly for an engineer to concentrate the whole of his attention on the lubrication of his machine, and to pay no heed to maintaining the engine in good repair, or to the supply of fuel; and in the same manner it must be recognized that the vitamins are only one group of dietary factors essential to the smooth running of the human machine, and that they are of equal importance to but not greater than the supply of repair material in the form of proteins, or the supply of energy-yielding foodstuffs.

The whole question of the vitamins in their relation to the food of the people is best viewed from a standpoint of common sense. It must be appreciated that as we depart from the foodstuffs provided by Nature, so inevitably will the health of the nation suffer sooner or later.

Unfortunately, the economic conditions of our large towns render it necessary that much of the food supply is subjected to processes of sterilization and preservation, but it appears that there is always a factor of safety if a supply of fresh vegetables and fruit is ensured. Professor E. V. McCollum, of Johns Hop-

kins University, Baltimore, has suggested that we should call milk, eggs, green vegetables and fruit "protective foods," on account of their great value in ensuring an adequate supply of substances of the vitamin class.

When full consideration is given to the dietaries of the large masses of the industrial populations, it is soon apparent how great a proportion of them are living very near the borderline of deficiency in the valuable substances contained in fresh vegetables and fruit. Possibly it will be found that this form of under-nutrition is to a large extent responsible for the lower standard of health and physique obtaining amongst these people, and it would be well if medical officers of health and others who are interested in the health of our great communities bore in mind this borderland of disease.

From observations on animals it has been made apparent that maintenance for long periods of time on diets only slightly deficient in the vitamins may have serious consequences, since seldom, if ever, are the symptoms induced sufficiently striking or noticeable for the cause to be detected. Large numbers of our working people appear to be in this indefinitely pathological condition, resulting from a chronic state of slight undernutrition.

103%, the pulse was 114 and respiration 32.

The following prescription was then ordered:—

Liq. Ammonia Acetatis	m. 10
Vinum Ipecac	m. 10
Tinct. Digitalis	m. 4
Ammonia Carbonas	gr. 5
Syrup Tolu	m. 15
Aqua	add oz. 1

T. D. S.

The patient improved steadily on the 11th day, the temperature came down to normal, the lungs cleared and in time all fractures united up, the wounds healed up and became all right.

The interesting points are that, in spite of the dirty condition of the head fracture and pressure produced on the brain, the wound healed up aseptically and there are no after effects.

II

Sodium Gynocordate and Morrhuate in Leprosy.

By L. T. B. N. MUKHERJEE,
L.S.M.F. (Bengal)

In charge T. A. Hospital Laboratory, Lashkur.

In the following article I have tried to show, mentioning a few of my typical cases, how during my five years' laboratory experience I have found the judicious use of Sodium Gynocordate and Morrhuate preparations beneficial in the treatment of Leprosy. They are, in my opinion, of immense value to medical men, for they seem to

have actually cured, at least temporarily, this awful scourge of humanity.

Having studied a number of Leprosy cases, I came to the conclusion that Leprosy is not an uncommon disease here, in these provinces of Central India and Central Provinces, and that professors of medicine should seriously take up the question of finding out something that can be relied upon in successfully combating this pest lest it should make a permanent home in this part of India.

Leprosy that I have met with here shows a similarity of signs and symptoms in nearly all the cases, and I, therefore, think it necessary to mention here, in short, what, in my personal view, are the causes and varieties of Leprosy commonly found here and what are its characteristic features.

Causes.—This disease is caused by the presence of Bacilli Lepra in the blood. Though heredity plays a prominent role in keeping up the disease, yet I found in a number of cases that they are purely of an acquired form showing clearly that this disease is of an infectious nature and can victimise even those who have not got any hereditary taint in their blood.

Varieties.—Two forms of Leprosy are found here—(a) Nodular. (b) Anæsthetic, the latter is

more common than the former.

Characteristic feature.—This disease runs a very insidious course which is divided into three stages.

First stage.—The appearance of either a small nodular or an anæsthetic patch on the extensor surface of the arms and legs, is the first thing to attract the notice of the patient. But as it does not in any way inconvenience the man in the beginning, he does not come for any medical aid.

Second stage.—When after some time (the period varying from a few months to a few years) he feels some slight tingling (neuritic) pains persistently present in the extremities and when the anæsthetic patches grow in size he gets anxious and comes for regular treatment.

Third stage.—In this and the last stage of the disease the nails come off. Nodules get much enlarged disfiguring the features and if the anæsthetic patches are present they gradually increase and disable the whole limb.

Diagnosis.—The very appearance of the patient is enough to help in forming a correct diagnosis of the disease. But it sometimes can be mistaken for Lupus and Tubercular Syphilides and then microscopical examination settles the question by localising the bacilli.

Method of Staining.—The bacillus can be easily found in the

blood from the affected part or from the nasal discharge when examined under 1:12th Oil Immersion lens. It is an acid fast organism and takes carbol fuchsin stain. To attain a positive proof the bacilli should be cultured in the gelatin medium.

Treatment.—In cases of Leprosy I have tried the following method of treatment both with Gynocordate and Morrhuate. A 3 per cent. solution either of these drugs is made (vide directions given by Lt.-Col. Sir Leonard Rogers) and $\frac{1}{2}$ c.c. of it is injected intravenously on the first day. This dose is gradually increased to 2 c.c. during the course of treatment which requires several injections. Though the injections can be given subcutaneously, yet intravenous injections are preferred as subcutaneous injections are liable to produce local irritation and they take decidedly a much longer time to react. Both these drugs are efficacious in the disease, but as it will be seen from the undermentioned cases, Sodium Morrhuate proves to be the better of the two.

Case No. 1.—K. L., aged 25 years, Bania by cast and a clerk by profession had acquired a form of Leprosy. There were anæsthetic patches over his face and extremities, and he generally used to get blebs over the anæsthetic area when they used to come in

contact with any hard substance. (Viz., by even putting on shoes). These blebs used to leave ulcers which were very difficult to heal.

Duration of the disease.—Three years or more. He was given Sodium Gynocardate injections. After a course of 40 injections the blebs did not appear, anæsthetic patches lessened and he was on his way to recovery. The very drug was continued till 90 injections were given but with no better results.

Case No. 2.—S. L., aged 50 years, Bania by caste and profession, had acquired Nodular Leprosy of seven years' duration. He came when he was quite disfigured with nodules over his face and nose. The nails were cracked and falling off from the distal ends. There were also nodular patches over the extensor surfaces of both the extremities. The drug tried on him was Sodium Gynocardate which reacted after 50 injections. The process of destruction of the nails stopped, nodules got less and the man felt much better. Later injections were not of much value.

Case No. 3.—Ramcharan, 17 years, Bhoi by caste, syce by profession, had hereditary form of Anæsthetic Leprosy. The disease manifested itself in the 15th year. The man had anæsthetic patches all over the body, his fingers being bent, he was unable either

to hold or to lift up any heavy thing. Sodium Gynocardate injections were tried but after even 45 injections, the man was not much relieved.

Cases 1, 2 and 3 were then again given Sodium Morrhuate injections and they all improved under the action of this drug after 30, 40 and 35 injections respectively.

Case No. 4.—L. T. S., aged 35, had acquired Leprosy for two years or more; there were anæsthetic patches over his extremities. After a course of 45 injections of Sodium Morrhuate sensation returned in the anæsthetic patches. The patient was greatly relieved.

Case No. 5.—S. G. G., Telephone Inspector, aged 42 years, Deccani Brahmin by caste, had Anæsthetic Leprosy. There were patches over his face and extremities. After a course 30 injections the man was much better and after 20 more injections of Sodium Morrhuate he was temporarily all right. It is now more than a year he has not returned with his former complaint.

Case No. 6.—K. R., aged 15 years, a student, Kayastha by caste. He had hereditary Leprosy of the Anæsthetic variety, and had patches all over his extremities and face. After a course of 25 injections of Sodium

Morrhuate the patient was much better. He was nearly cured after 47 injections but had to go away with his family and so his treatment was discontinued. Besides these I have had several other cases with similar results.

Now (December 1921), there are about 12 cases still under trial with the above mentioned drugs and also with Sodium Hypnocarpate. I hope to give further details of these cases next year and trust it would be of interest to my colleagues.

CURRENT TOPICS.

Helminthiasis and Dysmenorrhœa.

Eight cases of dysmenorrhœa associated with intestinal worms have been treated solely by vermifuges and with complete success. As a rapid method of diagnosing helminthiasis *Conillaud's sign* is very useful. This sign consists in hypertrophy of the fungiform papillæ of the tongue which become visible to the naked eye as little red dots on the tip and margins of the tongue. This sign is usually confirmed by the discovery of eggs of the parasites in the rectum.

—*The Medical Review.*

Salvarsan Adulterators Receive Prison Sentences.

The Salvarsan adulterations in Germany and other countries, which caused so much difficulty in the drug markets during 1919 and 1920, were recently taken up by the Criminal Court of the County of Hamburg. After a trial lasting fourteen days, in which many experts were examined, the manufacturer, Gerloff, and his superintendent, Von der Heyde, were sentenced to three and one-half years in prison and to five years disenfran-

chisement. Sixteen defendants received two-year prison sentences each, and sixty-two others who had conducted a flourishing business in adulterated Salvarsan were fined 20,000 marks. Six persons were acquitted.

Those convicted of adulteration had manufactured and sold a yellow powder from substances which were not only worthless, but dangerous to health. It bore a striking resemblance to the genuine Salvarsan, and the labels and packing were so perfect an imitation of the genuine Hoechst product that it could easily be mistaken for the genuine even by physicians. The convicted men made a large amount of money by handling these adulterated products, as they were selling this stuff at a time when raw materials were scarce, and the entire world was crying for the genuine German product, and it was easy to find purchasers.

The judge in his charge to the jury condemned the unscrupulousness by which the defendants had endangered the lives of their fellow-men for the sake of greed, and he asserted that the good name of the German industry had been injured. He felt that another grievous factor in these adulterations was that the idea had gotten abroad that German manufacturers were attempting to sell poisonous medicines for ulterior purposes and such charges had appeared in foreign newspapers. The severe punishment inflicted upon those convicted will, it is believed, put an end to further adulterations of Salvarsan and will discourage possible repetitions. —*The American Physician*

Cases of Infected Knee Joint Treated by Incision, Drainage and Movement.

When a diagnosis of septic knee joint is made, treatment should be begun at the earliest possible moment. This should consist of free opening of

the joint by lateral incisions, 4 to 6 in. long, on either side of the patella followed by thorough irrigation, the breaking down of all adhesions, manipulation by full flexion and extension, the introduction of several rubber drainage tubes, the application of wet boric lint covered with oiled silk, and the establishment of continuous drainage of the joint by capillary action. The dressing should be changed once a day with removal of the tubes and irrigation, full flexion, and extension of the joint.

This treatment should be repeated daily until the wounds are healed. Failure will occur if any of the details are not observed; that is, if the incisions are not large enough, if the joint is not fully flexed each day, or if the dressings are not kept wet or are discontinued before the wound has thoroughly healed. The changing of dressings and the movement of the joint are comparatively painless. This method of treating septic knee joints apparently gives the best prognosis as regards both life and function.—*Surgerv, Gynecology and Obstetrics.*

The Diagnosis of Intestinal Tuberculosis.

LOTT (*Wien, klin. Woch.*) gives the results of numerous examinations of the faeces, with respect to the value of the detection of occult blood and of tubercle bacilli in the diagnosis of intestinal tuberculosis. He found that in all cases of tuberculous ulceration of the intestines occult blood could be detected in the faeces by the benzidin test, after diet which had been free from any food containing haemoglobin for six or seven days. From the results of his observations he concludes that examination of the faeces for tubercle bacilli, as an indication of intestinal tuberculosis, is useless, since the tubercle bacilli found in the faeces are chiefly due to the patient swallowing his own sputum,

which contained tubercle bacilli. In cases of extensive tuberculosis of the intestines, when the pulmonary disease has not caused the sputum to contain tubercle bacilli in large numbers, then the faeces have contained few tubercle bacilli or generally none at all. When the expectoration has been free from tubercle bacilli the faeces have been found also free from tubercle bacilli, although extensive intestinal tuberculosis has been present.—*British Medical Journal.*

Treatment of Sciatica.

BARRE and GUSSETT (*Journ. de radiol. et d'electrol.*) have treated by x rays 20 cases of sciatica in which the symptoms were due to radiculitis caused by vertebral arthritis, as shown by x-ray examination: 12 of the cases were cured, 5 were improved, and 3 only derived no relief. The forms which were most susceptible to treatment by x rays were those in which pain constituted the most prominent sign. The patients hardly ever showed any amyotrophy or changes in the reflexes. Radiculitis of meningeal origin, such as that caused by syphilitic meningitis, did not appear to be definitely affected by the treatment. In cases in which radicular pain was associated with pyramidal disturbance x rays generally had no effect on the latter. The writers found that the chances of success were not decidedly diminished by the fact that the radicular pain was of old standing, although recent cases were more susceptible to treatment. As a rule small doses repeated once a week were sufficient to produce a cure. In some cases no improvement occurred, although no explanation of the failure could be given.—*British Medical Journal.*

Duodenal Ulcer.

T. R. MATIN, Duluth (Minn. Med., December, 1921). Conclusions are:

(1) A little more than one-half of duodenal ulcers in this series treated by gastroenterostomy got complete relief. The relief was absolute; they are free from any digestive disturbance, and usually eat what they please. Twenty-five per cent. were benefited, and 12 per cent. not improved.

(2) Thirty-five per cent. in this series of uncomplicated duodenal ulcers responded to rather simple dietary restrictions and alkalies, at least in so far as remaining symptom free for a reasonable period of time is concerned.

(3) At the present stage of our knowledge, the fear of possible malignancy arising on gastric ulcer must still be a large determining factor in the choice of surgical treatment; but the situation deserves the most intensive study.

(4) Considering the fact that duodenal ulcer is exceedingly common and relatively benign, and many people go through life with this ailment without treatment and without much inconvenience, it seems entirely reasonable that all cases not presenting definite and well known surgical complications should be given the benefit of medical treatment. This must remain true despite the remarkable surgical results of treatment in properly selected cases. The successes enumerated, from 50 per cent. to 80 per cent., variously estimated, still leave 20 to 50 per cent. whose only remaining hope is further questionable surgery, or medical treatment. Would it not be advisable to try medical treatment first?

CORRESPONDENCE.

THE CALCUTTA MEDICAL COLLEGE.

SIR,—Previously, the Principal of Calcutta Medical College

used to give two years' concession to the L. M. P. Diploma holders who desired to study in that College for M. B. degrees. Recently, I am informed, this concession has been withdrawn by the Principal. Two or three friends of mine after passing the State Medical Faculty Examination of Bengal were very desirous to enter the College with a view to obtaining the M. B. Degree, but now, on hearing the news of the withdrawal of the aforementioned concession, have given up that idea.

In this country (China), there are three Medical Colleges which confer M. B. & B. S. Degrees; and I am informed on good authority that the M. B. & B. S. Degrees of Hong-Kong University are equivalent to those of Oxford. Here a student after passing Matriculation (with Latin optional) will have to study for five years, but a holder of the L.M.P. Diploma, India, can get one year's concession very easily.

I cannot understand why in our own country the University authorities are so severe, and seem to want to close the door of higher education upon us. To me, it seems quite unjustifiable in these days when India requires her children to be highly educated, and especially in Medical Science, in order to com-

bat with the various diseases which are killing thousands day by day. I would deem it a great favour if you could kindly give this very important subject your very special and favourable consideration, and cause it to be brought to the notice of the Ministers, for I think it a great pity that the concession which has been enjoyed for over twenty years should be so suddenly withdrawn.

ABINASH CH. DE.,

First Class S.-A.S.,

Bengal Presidency.

British Military Hospital,

Tientsin.

THE INDIAN JAILS COMMITTEE.

SIR,—The Jails Committee has suggested in its report that where there are two or more Sub-Assistant Surgeons attached to Jails, one of them should, as a rule, be made to sleep in the hospital at nights and where there is only one Sub-Assistant Surgeon, a telephone should be put up connecting the hospital with his quarters and it should be the duty of a senior hospital orderly on duty to ring up and summon the Sub-Assistant Surgeon if any patient is so ill as to require his attention during the night. At present the Sub-Assistant Surgeons have to go at nights to see even those prisoners

who complain of trivial ailments and treat them from outside, *i.e.* without entering the barracks in which they are locked up. I cannot understand what harm there is if the same telephone arrangement is made also in those Jails in which two or more Sub-Assistant Surgeons are working. They will thus be saved the trouble of sleeping inside the Jail, which is very undesirable and objectionable. As for their attendance on prisoners suffering from serious diseases they would gladly go as often as possible to the hospital or even stay there for long intervals at nights when necessary. In respect of night duty the Jail Committee wishes to make the condition of Sub-Assistant Surgeons worse than that of the warders who are required to sleep inside the Jail at nights, each being given only two or three hours' night duty and not more. While putting forth my arguments against the proposals of the Jail Committee for regular night duty I must not omit to point out that all the barracks are locked up at nights and the keys are in the custody of the Jailer who sleeps in his quarters. When any barrack has to be opened at nights the Jailer has to be sent for, and unless he is also made to sleep inside the Jail, night duty suggested by the Jail Committee is useless.

1922.]

2. It has been suggested by the Committee that no compounder need be provided in a Jail with an average population of below 300. This economy will not only cause great worry and anxiety to the Sub-Assistant Surgeons attached to Jails whatever may be their population, but it will also place them in a dangerous situation. In the Jails they must have their own men to assist them in order that they may be able to do their work in a proper and peaceful manner. The Jail people are afraid of leaving even a small piece of iron, glass or cloth in possession of the prisoners and the Sub-Assistant Surgeons who keep sharp instruments and most poisonous drugs in the hospitals have been told, though indirectly, to take the help of the hospital orderlies who are convicts and who are apt to deceive and play mischief with them at any time they like. Moreover, the Committee seems to have taken into consideration only the quantity and not the nature of the hospital work. Most often the nature of the work is such that the compounder's presence is very necessary. At present Sub-Assistant Surgeons hold charge of both the Jail and Police hospitals together in places where the Jail population of District Jails is small and the compounders attached to the Police hospitals

assist them in Jail Hospitals. Since there is a rumour that most of the Police hospitals are to be abolished, the appointment of a Compounder to every Jail Hospital without exception will become an inevitable necessity.

The Committee considers that it is essential that the Sub-Assistant Surgeon like other subordinates of the Jail should (except in strictly professional matters) be subject to the authority of the Jailer. I have dealt with this point at length in the course of my comments on the Jail Manual. I have, however, to add here that it is known to every body that the Sub-Assistant Surgeon has to attend only to his professional duties in the Jail and that he is not at all required to do any work of an executive nature. Under these circumstances, is it necessary for the Sub-Assistant Surgeon to be subject to the authority of the Jailer? There are two head officers in every Jail, *viz.* the Superintendent and the Medical officer, to whom both the Jailer and the Sub-Assistant Surgeon are subordinate—the Jailer working on the executive side and the Sub-Assistant Surgeon on the medical side. It is not understood why the Jail authorities are so particular on this matter and fond of putting the Sub-Assistant Surgeon under the Jailer unnecessarily.

4. Another improvement suggested by the Committee is that the services of the Sub-Assistant Surgeons attached to Jails will be placed unconditionally at the disposal of the Inspector-General of Prisons and it will be left to that officer to post them to whatever Jail he sees fit, and transfer them from Jail to Jail at his discretion so long as they remain in the Jail Department, the period suggested by them being three to five years. They will not be withdrawn by the Inspector-General of Civil Hospitals without the consent of the Inspector-General of Prisons. It will also be at the discretion of the Inspector-General of Prisons to punish a Sub-Assistant Surgeon placed under his control by way of fine or suspension. Up till now the Inspector-General of Civil Hospitals alone deals with the case of Sub-Assistant Surgeons anywhere they are sent to work and never likes to punish his subordinates unless he is fully convinced as to the genuineness of the complaints, if any, made against them; for he knows that they have to work in the midst of the Jail people.

I trust that the Inspector-General of Civil Hospitals will be pleased to go through those portions of the report of the Jail Committee which concern the Sub-Assistant Surgeons' work. He will also kindly see what

work is required of them especially in Central Jails. He is sure to find that most of the duties that they are required to do there are unnecessary, some of them being those which used to be performed by the Jail staff formerly.

A SUB-ASST. SURGEON.

Our Branches at Work.

Punjab.—The Fourth Provincial Conference of the All-India Sub-Assistant Surgeons' Association, Punjab Branch, was held at the Temperance Hall, Amritsar, on 22nd April, 1922. Major R. A. Chambers, M.B., O.B.E., I.M.S., Principal, Medical School, Amritsar, presided. Major H. C. Keates, M.D., B.S., Civil Surgeon, Amritsar, also graced the occasion with his presence. 108 Sub-Assistant Surgeons attended from far and near.

The following scientific papers were read:

1. "Sleeping Draught", by Mr. Pt. Ghasita Ram, Amritsar.
2. "Treatment of Cholera", by Mr. Gianchand Blaggana, Civil Hospital, Delhi.
3. "Treatment of Septic Wounds with Eusol", by Mr. Chhabil Dass, Pasteur Institute of India, Kasauli.
4. "Curiosities of Human Temperature", by Mr. Sayed Ali Hasan, Senior Demonstrator of Anatomy, Medical School, Amritsar.

All the guests were entertained at Dinner in the Bombay Hotel.

The members present in Conference contributed Rs. 58 in cash.

The following office bearers were elected for 1922-23.

PATRON:—R. B. Mathra Dass, Assistant Surgeon, Moga.

PRESIDENT:—R. S. Khan Chand, Kasauli.

VICE-PRESIDENTS: 1. K. S. Mohd. Jan, Amritsar. 2. Ghasita Ram, Amritsar.

SECRETARY:—Gianchand Blaggana, Delhi.

JOINT SECRETARIES:—Manohar Lal, Amritsar. S. Ali Hasan, Amritsar.

TREASURER: Subedar Vaishno Ram, Amritsar.

AUDITORS: 1. Jagdish Ram, Amritsar. 2. Harjas Ram, Amritsar.

Members of the Executive Committee:—

9. Office bearers as Ex-officio members.
10. Mool Chand, Patti, Dt. Lahore.
11. Ram Raksha Mall, Amritsar.
12. Gurmukh Singh, Amritsar.
13. Tulsi Das Mehtani, Jatoi, Dt. Mozaffargarh.
14. R. S. Hari Ram, Delhi.
15. Amba Prasad, Shaharanpore.

16. Pala Ram, Hansi, Hissar.

17. Khushi Ram, Asstt. Surgeon, Amritsar.

18. Chhabil Das, Kasauli.

19. Raja Ram, Civil Dispensary, Lahore.

20. Mukha Singh, Sirhali, A.S.R.

21. S. Hosain Shah, Said-mitha, Lahore.

22. Balmokand, Shahabad, Dt. Karnal.

23. Nand Lal, Bhalwal, Dt. Shahpore.

24. Gulam Husain, House Surgeon, Amritsar.

25. Aziz Din Ajnala, Dtt. Amritsar.

26. Najmuddin Raikot, Dt. Ludhiana.

The following resolutions were passed:—

1. That this Conference of Sub-Assistant Surgeons of the Punjab places on record its deliberate opinion that the pay and prospects of their class stand in need of early and material improvement and require to be brought into line with those of similar but less important services, and respectfully but emphatically endorses the memorial on the subject by individual members of the Service, and prays Government to take early steps to ameliorate their condition.

2. That this Conference of Sub-Assistant Surgeons requests

Mr. Hidas Rai Raizadar in the unavoidable absence of Mr. Sadiq Ali, President, Reception Committee, welcomed the delegates in a short, sweet and humorous speech. Mr. Lekhraj Singh of Aligarh then proposed Mr. Bankey Lal to the chair, the proposal was seconded by Mr. Masud Ali of Fatehgarh and supported by Mr. Madan Gopal of Muttra and carried unanimously. After the telegrams and letters of regret were read the President asked Rai Saheb Ram Narain Lal, Provincial Secretary, to read the report. After the Presidential address a number of resolutions were passed, and a vote of thanks was proposed by Mr. Sia Ram Gupta of Bithour. All those present were then entertained to a garden party.

The Conference re-assembled on 26th at 1 P.M. Rai Saheb Ram Narain Lal, presiding as the President had to leave Cawnpore, immediately due to some urgent work. The following scientific papers were then read.

1. "Actions of drugs", by Mr. Hulas Rai.

2. "Hookworm, its causation and treatment", by Mr. A. C. Bharadwaj.

3. "Treatment of Dhobies Itch" by Mr. Saved Hamid Husain.

4. "Treatment of Pernicious anæmia by Sodium Cocodylate", by Mr. M. P. Saxena.

5. "Somain Injections in Asthma" by Mr. Zahar Husain Naqibi.

A very lively discussion followed in which all assembled took part. As it had become very late the remaining papers were considered as read.

After a vote of thanks was proposed to the chair and to the members of the Reception Committee and was passed, the Conference closed at 6-30 P.M. on 26th February, 1922. Thereafter a social gathering was held.

The following are the resolutions passed at the Conference:—

1. That after full consideration and consultation with the persons in authority this Conference has come to the conclusion that the minimum requirements of the Western system of medical education is a fixed preliminary educational standard and a full five years' curriculum in a well-equipped teaching institution as fixed by the British Medical Council. This Conference, therefore, urges upon the Government and the Hon'ble Minister of Public Health to concentrate all resources of medical training to adopt such complete courses and abolish altogether the prevailing haphazard methods of creating inefficient medical men.

2. That the Conference draws the attention of the Government to the raising of the pay of Sub-Assistant Surgeons in Government employ, Local bodies, Railways and Dufferin Fund Hospitals, etc., etc., from Rs. 100 to Rs. 350 immediately to allay the growing discontent of the class. The increase should be given with retrospective effect from January 1920 as has been done in the case of other services in these Provinces.

3. That the following allowances may also be raised:—

(a) In case of teaching appointments in the Agra Medical School and that of House Surgeons as much as in appointments where there is no chance of private practice or where private practice is prohibited as in Travelling and Canal Dispensaries, on epidemic duties, jails, Lunatic asylums and a compensation allowance of at least Rs. 50 per mensem be sanctioned.

(b) That a Sub-charge allowance when in sub-charge of District Hospitals to be Rs. 30 per mensem.

(c) That the house rent allowance be granted at a minimum rate of Rs. 20 per mensem and that a duty allowance of Rs. 3 per day to those who are posted on 24 hours continuous duty.

(d) That the allowance for any additional charge or extra duty should be Rs. 30 per mensem.

The allowance for the Medical inspection of Schools should be raised from Rs. 5 to Rs. 10 per mensem while the hostel allowance should be double the present rate.

(e) That the allowance for lecturing in First Aid should be Rs. 20 per mensem. That the female Sub-Assistant Surgeons be given an allowance of Rs. 20 per mensem for teaching the Dais and Compounders.

(f) That a conveyance allowance for persons in charge of Travelling dispensaries should be at the rate of Rs. 30 per mensem.

4. That the Government be requested to promote Sub-Assistant Surgeons to the Assistant Surgeons' grade on a fixed percentage after ten years' service. It is also prayed that the promotions should be on an analogous proportion to the promotion of the Civil Assistant Surgeons to the Civil Surgeons' grade.

5. That this Conference requests the Government:—

(a) To amend the U. P. Government Medical Act so as to give due representation on the Medical Council to Members of Sub-Assistant Surgeons' Class in proportion to their number on the register, having regard to the fact that the medical graduates who are numerically less are given the right to elect more

members than Sub-Assistant Surgeons.

(b) It is also requested that the Government may be pleased to give Sub-Assistant Surgeons a thorough and genuine representation on the State Board of the Medical Examination, as this Board is solely meant for and is in the interests of Sub-Assistant Surgeons' Class. No one but members only as recommended by the Association should be nominated by the Government on the Board to represent the views of the class.

6. That the Government be requested to abolish grade examination and start post-graduate courses for Sub-Assistant Surgeons' Class at an early date.

7. That this Conference offers its hearty congratulations to Mr. Brij Ballab Mathur and Subedar Mehdi Hasan Khan on their promotion to the Assistant Surgeons' grade. The Conference also offers its heart-felt thanks to Col. Close, I.M.S., and the Government for these promotions.

8. That the Medical Schools should not be the place:—

(a) Of recruitment of Sub-Assistant Surgeons for Government service but they should be the model institutions for medical training, and therefore, the Conference urges that the practice of indiscriminate allotment and stipends to all students

should be stopped and in its place a few scholarships to the merited students be awarded.

(b) That a suitable tuition fee be charged from every student of the Medical Schools.

(c) That the new ten years' bond be cancelled and the Government be approached to give immediate effect to the L.S.M. scheme which has long been in abeyance.

9. That the Government be requested to consider the change in the designation of Sub-Assistant Surgeons to that of Medical Officers. That, where there are more than one Medical officer in an institution they may be termed as 1st, 2nd, and even 3rd Medical Officer.

10. That the Government be requested that Sub-Assistant Surgeons after 55 years of age should not compulsorily be made to retire, but extensions up to the limit of 60 years be given to those who are fit and deserving as is done in all other services.

11. That Sub-Assistant Surgeons should be allowed to occupy the Canal Inspection house if they are vacant. In case any superior officer is occupying the main portion, the side-room should be put at the disposal of the Sub-Assistant Surgeons, as is the case with Zilladars, Overseers and Sub-divisional Officers, etc., etc.

12. That the Sub-Assistant Surgeons while officiating as Assistant Surgeons be allowed the officiating allowances according to the Civil Service Regulations.

13. That the privilege of study leave be extended to Sub-Assistant Surgeons. It may be limited to 25 per cent. of their reserve strength at a time and while on such leave they may be treated as on reserve duty.

14. That this Conference draws the attention of the Government and the Hon'ble Minister to the last request in para. 7 of the address presented by the Association to His Excellency the Governor of the United Provinces on the 17th March, 1921. In the opinion of the Conference it is most essential that a member of first class should be appointed as Personal Assistant, Head Assistant, or Secretary in the office of the Inspector-General of Civil Hospitals at least if not practicable to appoint him in the office of the Hon'ble Minister on the analogy of the office of the Director-General, I.M.S., where even an I.M.D. has been appointed as Secretary to safeguard the interests of the class.

15. That the Conference notes with great indignation the unbecoming and unwarranted language used by Col. R. G. Turner, I.M.S., Officiating Inspector-General of Civil Hospitals, U.P.,

in his address to the Agra Medical Students regarding this Association.

16. That the Standing Committee be requested to prepare a workable scheme for having a library of the Association and place it before the next Conference for consideration.

17. That Rs. 50 be provided in the budget for being awarded as a prize to the writer of a best scientific paper on any medical subject.

18. That in future all bills for payment should first go to the Provincial Secretary who will scrutinize them and send them to the Financial Committee with his remarks for passing them. When the bills have been passed by the Finance Committee they will be sent to the Treasurer for payment.

19. That the accounts be audited by a paid auditor appointed by the Standing Committee.

20. That this Conference has learnt with deep regret the untimely and unexpected retirement of Col. J. K. Close, I.M.D., I.M.S., Inspector-General of Civil Hospitals, U.P., who had done so much to better the prospects of the class and wish him a long life and happy journey.

21. That the accounts as presented by the Treasurer be passed.

22. That the following budget be sanctioned for the year 1922-23:—

INCOME.	
To be raised from individual Sub Assistant Surgeons, Rs. 2 per head as annual subscription ...	1,000
Total ...	1,000
EXPENDITURE.	
1. Type writer machine, one.	300
2. Clerical charges	300
3. Postage	120
4. Stationery	50
5. Travelling allowance	150
6. Printing charges	50
7. Misc. charges	30
Total ...	1,000

23. That a permanent reserve fund be created by appealing to each Sub-Assistant Surgeon to pay at least from 10 to 25 per cent. of the increase which they receive during the first month.

24. That the following office-bearers be elected:—

PRESIDENT.—S. L. Sharma, Meerut.

VICE-PRESIDENTS.—B a n k e y Lall, Allahabad, and Khan Sahib Masud Ali, Fatehgarh.

PROVINCIAL SECRETARY.—Rai Sahab Ram Narain Lal, Fyzabad.

JOINT SECRETARIES.—Lekhraj Singh, Migarh, and R. D. Pandaya, Agra

ORGANISING SECRETARIES.—Panna Lal Sood, Lucknow; and G. P. Bharadwaj, Agra.

TREASURER.—Dau Dayal Bhatnagar, Bhongaon.

MEMBERS OF THE STANDING COMMITTEE. Mrs. Deen, Cawnpore; Sia Gupta, Bhiloor Cawnpore; Mohammad Yusuf, Police Fatehgarh; Pyare Lal Jaini, Distt. Hospital, Cawnpore; Madan Gopal Bhatnagar, Distt. Jail, Muttra; Ahmad Hussain, Lucknow; Kunj Behari Lal Varma, Meerut; Zahoor Husan Naqvi Jalapur, Fyzabad; C. S. Sharma, Kaimganj, Farrukhabad; and Daya Nidhan, Police Hospital, Allahabad.

25. That a vote of thanks be passed to the members of the Reception Committee with a special vote of thanks to Messrs. Pearey Lal Jaini and Hulas Rai Rai Zade, who worked day and night to make the Conference a real success.

The All-India Sub-Assistant Surgeons' Association.

Statement of Accounts for the year ending 31st December, 1921.

Dr.	RS. AS. PS.	Cr.	RS. AS. PS.
By balance from last year's account	2,015 5 7	To cost of paper and printing charges of the Indian Medical Journal	1,910 10 6
By subscription from members old and new including admission fees	8,195 10 0	Establishment, Salaries, etc.	1,668 0 0
Advertisement Charges	1,339 13 0	Rent	60 0 0
Miscellaneous Receipts	411 11 6	General Charges	349 15 0
Amount received from Dr. Dayal Singh for printing Military paper	110 0 0	Postage and Telegrams	1,477 15 3
Donation from Bannu Branch	217 12 0	Cost of new furniture	58 8 0
Amount due to Shillong Branch	1 11 0	Stationery	441 9 6
		Travelling Allowance	1,022 10 6
		Amount refunded to Branches	15 0 6
		Other printing charges	53 0 0
		Advance to clerk of General Secretary	50 0 0
		Total Rs.	10,110 3 3
		Balance as per details as under	2,212 1 10
Grand Total Rs.	12,322 5 1	Grand Total Rs.	12,322 5 1

Examined and found correct.

G. D. KHANDEKAR,

Hon'g. Auditor.

Hd. Accountant.

Govt. Treasury, Indore.

SURJOO PRASAD, RAI BAHADUR,
General Secretary.

The All-India S.A.S. Association.

G. D. KHANDEKAR,

M.C.P.S.,

Treasurer.

The All-India S.A.S. Association.

INDORE,

11th February 1922.

Details of Balances.— RS. AS. PS.

Balance with the Imperial

Bank of India, Indore.

In Postal Savings Bank,

Indore

With various Office-bearers

as per separate sheet

attached

Total Rs. 2,212 1 10

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OPENED!!

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Dr. B. L. GHEI, L.M.P., Physician and Surgeon,

Proprietor, Royal Medical Hall.

SARGODHA (Dist. Shahpur.)

*Statement of Balances for the year ending 31st December, 1921,
with the Finance Committee at Ahmedabad.*

RS. AS. PS.	RS. AS. PS.
Opening Balance .. 8,214 6 8	Amount remitted to Dr. Venkappa by withdrawal from Postal Savings Bank at Ahmedabad .. 100 9 0
Interest from Imperial Bank of India at Ahmedabad .. 76 0 0	Postage and Insurance .. 0 13 0
Interest from Postal Savings Bank at Ahmedabad .. 49 15 9	Total Rs. .. 100 13 0
Grand Total Rs. .. 8,340 6 7	Balance .. 7,939 9 7
	Grand Total Rs. .. 8,340 6 7

Details of Balances:—

RS. AS. PS.
5 years' Postal Cash Certificates .. 5,812 0 0
5 years' New War Bond G. P. Note .. 1,500 0 0
Govt. Promissory Note .. 500 0 0
Amount in Postal Savings Bank at Ahmedabad .. 127 1 7

Total Rs. .. 7,939 9 7

JOSEPH BENJAMIN,
Chairman,
FINANCE COMMITTEE, AHMEDABAD.
22nd January, 1922.

*Details of Balances with various Office-bearers on the
31st December, 1921.*

	RS. AS. PS.
1. General Secretary	19 3 9
2. Editor at Madras	657 8 4
3. Treasurer at Indore	81 12 0
4. Organising Secretary, U. P.	9 13 0
5. Dr. Kunj Beharilal, Secretary, Indigenous Drugs	50 0 0
6. Secretary, Agra Branch	5 6 3
7. Secretary, Baroda Branch	14 6 6
8. Secretary, Bombay Branch	6 5 6
9. Secretary, Dehra Dun Branch	0 11 3
10. Secretary, Gwalior Branch	17 13 6
11. Secretary, Hyderabad Branch	12 4 3
12. Provincial Secretary, Madras	5 0 0
13. Secretary, Trichinopoly Branch	10 0 0
14. Provincial Secretary, Sindh	0 12 3
15. Secretary, Amritsar Branch	2 11 8
16. Secretary, Karachi Branch	3 7 6
17. Secretary, Rangoon Branch	4 5 6
Total Rs. .. 901 8 10	

INDORE,
22nd January, 1922.

Checked and found correct,
G. D. KHANDEKAR,
Hony. Auditor,
Head Accountant,
Indore Treasury.

Statement of Accounts for the Month of January, 1922.

Dr.	RS. AS. PS.	Cr.	RS. AS. PS.
By balance from last year's account .. 2,212 1 10		Postage and Telegrams ..	23 10 6
By balance from last year's account with the Finance Committee at Ahmedabad .. 7,939 9 7		Stationery ..	8 12 0
By subscription from old and new members including admission fees .. 150 4 0		General Charges ..	37 5 0
Recovery of advance from the General Secretary's clerk .. 10 0 0		Establishment ..	40 0 0
		Rent ..	3 0 0
Grand Total Rs. .. 10,311 15 5		Total Rs. ..	112 11 6
		Balance as per details as under ..	10,199 3 11
		Grand Total Rs. ..	10,311 15 5

Details of Balances:—

RS. AS. PS.
General Secretary .. 0 1 9
Editor .. 1,407 8 4
Imperial Bank of India .. 560 9 0
5 years' Postal Cash Certificates .. 5,812 8 0
5 years' War Bond .. 1,500 0 0
Govt. Promissory Notes .. 500 0 0
Amount in Postal Savings Bank at Ahmedabad .. 127 1 7
Treasurer .. 152 9 0
With various Office-bearers as per sheet attached .. 138 11 3

Total Rs. .. 10,199 3 11

SURJOO PRASAD, RAI BAHADUR,
General Secretary,
The All-India S. A. S. Association
G. D. KHANDEKAR,
M. C. P. S.,
Treasurer,
The All-India S. A. S. Association.
JOSEPH BENJAMIN,
Chairman, F. C.,
AHMEDABAD.

25th March 1922.

THE ANTISEPTIC

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Medical Practitioner and Member, Madras Medical Council.

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Details of Balances with various Office-bearers at end of April, 1922.

	Rs.	As.	Ps.
General Secretary	...	...	592 12 9
Editor	...	...	792 4 10
Banks, Indore	...	...	3,107 9 0
5 years' Postal Cash Certificates	...	...	5,812 8 0
5 years' War Bonds	...	...	1,500 0 0
Government Promissory Notes	...	...	500 0 0
Amount in Postal Savings Bank at Ahmedabad	...	...	172 1 7
Treasurer	...	...	271 8 8
With various Office-bearers	...	...	138 14 3
Total Rs.	12,887	11	1

G. D. KHANDEKAR,
M. C. P. S.,
Treasurer,
The All-India S. A. S. Association.

Statement of Accounts for the Month of May, 1922.

Dr.	Rs.	As.	Ps.	Cr.	Rs.	As.	Ps.
Balance brought forward from last month's account ..	12,887	11	1	Postage ..	116	12	0
Subscriptions from old and new members including admission fees.	118	6	0	Stationery ..	9	14	8
Advertisements ..	325	0	0	General Charges ..	5	14	0
Recovery of advance from General Secretary's clerk ..	10	0	0	Establishment ..	56	0	0
Grand Total Rs.	13,641	1	1	Travelling Allowances..	131	6	0
				Rent ..	3	0	0
				Total Rs.	321	14	8
				Balance ..	13,319	2	10
				Grand Total Rs.	13,641	1	1

SURJOO PRASAD,
RAI BAHADUR,
General Secretary,
The All-India S. A. S. Association.

INDORE,
28th June, 1922.

G. D. KHANDEKAR,
M. C. P. S.,
Treasurer,
The All-India S. A. S. Association.

JOSEPH BENJAMIN,
AHMEDABAD,)
1st July 1922.) Chairman,
Finance Committee.

Details of Balances with various Office-bearers at the end of May 1922.

	Rs.	As.	Ps.
General Secretary	...	...	614 0 6
Editor, Madras	...	...	1,792 4 10
Banks, Indore	...	...	2,758 1 0
5 years' Postal Cash Certificates	...	...	5,812 8 0
5 years' War bonds	...	...	1,500 0 0
Government Promissory Notes	...	...	500 0 0
Amount in Postal Savings Bank at Ahmedabad	...	...	172 1 7
Treasurer	...	...	81 4 8
With various Branch Secretaries	...	...	138 14 8
Total Rs.	13,319	2	10

G. D. KHANDEKAR,
M. C. P. S.,
Treasurer,
The All-India S. A. S. Association.

Indian Medical Journal

A Monthly Magazine devoted to Medicine,
Surgery, Public Health, etc.

Published by the All-India Sub-Assistant Surgeons' Association.

EDITED BY D. V. VENKAPPA.

Vol. XVI]

JULY, 1922.

[No. 7.

MEDICAL RESEARCH.

It is indeed gratifying, no less from the standpoint of the alleviation of human suffering than from that of the achievement of the medical science, that there has of late been witnessed, in the domain of medical research, a vast and varied volume of work bespeaking the untiring energy and acute intelligence of a large number of leading scientists whose names posterity has right reason to cherish with feelings of affection and gratitude. The encouragement given to such activities in countries where monied magnates are not wanting to vie with the Governments in the direction of donations,

endowments, etc., has contributed in no small measure to the impetus of this useful work; and the results announced from time to time, though by no means final, redound to the credit of the distinguished personages whose researches have thus materialised themselves. While we appreciate these noble and invaluable labours in the realm of science, we feel constrained to lay stress on one or two fundamental facts which arrest our attention on a careful survey of such activities. In the first place, have all these activities in the field of research been so far well-aimed? Is the present *modus*

operandi conducive to the best possible results? If not, what is the line of action that will produce the best results consistently with the time and labour spent thereon? In other words, what ought to be the ultimate aim of medical research? These are some of the questions that will strike themselves to those who bestow their careful consideration on the problem; and we are glad to note that already it has attracted the attention of some scientists of position and worth. Speaking the other day before the Medical Research Section of the Indian Science Congress, Lt.-Col. J. W. Cornwall, I.M.S., dealt with this subject in a manner at once appealing and impressive. After pointing out that our main efforts at the present time are directed towards finding out, as much as possible, the progress of the diseased conditions of the body, and that enormous pains are being taken to find out every possible fact in connection with the life history and metabolic activities of all the animal and vegetable parasites which are associated with disease of men and animals or are in symbolic relationship with them, he reminds us that we are, thus, "engaged for the most part in making a series of isolated frontal attacks on subsidiary elevations instead of keeping our eyes always fixed on our real

peak, which I take it you will admit to be 'the prevention of disease,' not the treatment of disease already in being, nor yet the discovery of how every disease is spread". Of course, a knowledge of the various parasitic diseases is useful in its own way; but if this knowledge does not help one in the matter of *preventing* such diseases, its usefulness is considerably minimised.

Man, it must be remembered, is healthy by nature, and diseases generally come to him by a deviation from perfect health. If diseases are classified into (1) diseases due to accidents, (2) diseases due to physical agencies, (3) diseases due to chemical agencies, (4) diseases due to specific parasitic agents, and (5) diseases due to disturbed function, (a) metabolic, (b) mechanistic, it will be seen that, while diseases due to accidents are in many cases beyond control, diseases of the (2), (3) and (4) classes are within control and preventible. So far as diseases due to disturbed functions of organs are concerned, it is noteworthy that some of these are sequelæ of parasitic infections and others are directly due to failure of the individual to live in perfect harmony with his environment. His organs, it is argued, may be congenitally imperfect owing to the errors of

his progenitors; or by his own ignorance and negligence or self-indulgence he has subjected them to strains they are unable to bear. "It is precisely here," says Lt.-Col. Cornwall, "that our want of knowledge is most conspicuous, and it is here that medical research will find its most fruitful field. If we can show men the way to keep their organs in good health, most of the specific parasitic agents will lose their ability to invade them."

The problem before the medical profession, therefore, is to discover what the laws of perfect health are; and Dr. Lawrence strikes the right note when he says that "we should always bear in the forefront of our minds that our aim is to know how to prevent disease from arising, by discovering how to maintain health and not how to deal with diseases which our ignorance and negligence have allowed to arise." It is impossible to shut our eyes to the fact that half the diseases man suffers from arise out of his ignorance, carelessness and self-indulgence. "For a child to be born perfectly healthy, that is, with no inherited functional weaknesses, it is necessary that its parents also should be perfectly healthy, that the gestation period should have been passed through with no error on the part of the mother, and that labour should

have been accomplished easily and naturally. For the child to grow up perfectly healthy, its food should be correct, both in quantity and quality, and it must be perfectly trained and taught both physically and mentally. For the adult to remain perfectly healthy the laws on which health is dependent must be observed, and the conditions under which he lives must be so ordered by the State that he is not subjected to danger from food, drink or environment. A break in the chain anywhere may lead to ill-health, for which the individual may or may not be primarily responsible. Under these circumstances, "is it not our duty," asks Dr. Lawrence, "as guardians of the public health who are supposed to know more about the origin and treatment of disease than the laity who have not made a life-study of these matters, to give to the world our considered opinions and beliefs in such a form that all can understand them? Ought we not to try to make our statesmen and framers of our laws understand that the important doctrine that should underlie all statecraft and all legislation is that man cannot be happy till he is healthy, and that it is within the bounds of possibility for him to be healthy if he wills it and if the State works for it?" And he reiterates the fact that the ultimate aim of

medical research must be, not to find ways and means for dealing with existing conditions, but to find ways and means to prevent those conditions from arising. Dr. Lawrence is far from advocating the abandonment of pathological and therapeutical studies; for, as he says, while disease exists means must be taken to alleviate it. "But," he adds, "I do declare that that side of medical work should be regarded as secondary, and merely a temporary necessity. I maintain that the thought that should be continually in the front of every medical man's mind is that the sick person he is called upon to treat should never have fallen sick, and that his principal duty is to teach people how to keep in good health. What happens to him after he has taken ill, though of consuming interest, is really a matter of secondary importance." Wiser words were never spoken; and we are glad to say that we are in full agreement with the views so cogently expressed.

Before concluding we feel it our duty to point out that in India medical research on the lines adumbrated above is a field where much remains to be done. We do not certainly forget the monumental labours of Sir Leonard Rogers, Sir Ronald Ross and other distinguished gentlemen in the field of medical

research. But their line of activities has been in a particular groove, and even there they can only be said to have touched the fringe of the problem. A vast region of medical research still remains unexplored. There are, in this country, various problems connected with diseases, an elucidation of which will unfold a glorious vista of human weal and happiness. The Ayurvedic and Unani systems of treatment, for instance, contain several hidden secrets, which, in the interests of mankind, ought to be unveiled. No doubt, the Madras Government have recently appointed a Committee to enquire into these systems of treatment. But the work of this Committee seems to be shrouded in mystery, and what eventually will come out of it, one is not in a position to conjecture now. Generally speaking, therefore, it can safely be asserted that, what with the allocation of substantial slices of the public revenue to schemes of doubtful utility or of comparatively less importance, and what with the general financial stress that the Government take shelter under, medical research and allied matters do not at present secure the attention which they deserve; and unfortunately we cannot count many Sir Tatass, and Sir Rash Behari Ghoses having the capacity and the inclination to come to

the rescue of the Government. Under these circumstances, the advancement of medical research in India is indeed very slow, while the need for such research is increasingly evidenced from day to day by the appalling mortality which a lamentable ignorance on the part of the people of the vital principles affecting health and preventable diseases so largely contributes to. May we join our humble voice to the chorus of demand that has already been made on this subject and may we hope that better efforts on the part of the Government, supplemented, of course, by those of the people, will soon usher in a brighter era of efficient medical research and consequently of improved public health?

RABIES AND PREVENTION OF HYDROPHOBIA UNDER DISPENSARY TREATMENT.

BY M. M. HAZRA,

Medical Officer, Sarangarh State (C. P.)

In spite of India's present civilization, very few might be aware of the real value of Pasteur's mode of vaccine treatment at the Institutions of Kasauli, Coonoor, and Shillong, because such treatment is not

available through charitable dispensaries. Owing to the distance of the places, it is difficult to induce and send patients to such institutions, even if they are paid the travelling expenses. One who has to practise in out-of-the-way places or in places situated far off from Railway communication, feels the bitter experience of all such troubles, and this particularly, when his practice is confined to aboriginal tribes, who, owing to want of literary knowledge, have no faith in the western mode of scientific medical aid, and who, on the contrary, being induced by the *Baids* and sorcerers, are inclined to blindly follow the footsteps of their forefathers. Hence they are apt to place reliance on the crude method of indigenous drug treatment or in sorcery.

I am here a victim to the above difficulties, and often experience trouble in sending my cases to the proper institutions for the treatment of Rabies (injured either by dog or jackal). From Police reports it is seen that such cases are plentiful in this part of the country; and, I presume, very few are coming to the dispensary for their treatment medically. Nevertheless, when cases of this nature do come to me for treatment and when they refuse to go to the Pasteur Institute, but ask for

some sort of medicine locally, I have to do something for them. Under such circumstances, in the course of my practice of 14 years, out of 87 cases, only three agreed to proceed to Kasauli; while the rest were treated by me at the State Hospitals of Korea and Sarangarh. All my cases were treated under the same and the one method, as hereinafter mentioned, and in all instances they were advised to remain in the hospital for a period of eight weeks, though some of them went away earlier.

The specific virus of Rabies is yet undetermined; but it is emphatically known that it never arises spontaneously and is often transmitted by the bites of rabid animals—particularly of the dog and jackal—to man. By authoritative demonstrations it has been proved that the virus of Rabies, which is transferred from one animal to another by a direct bite or any other form of abrasion, remains in the saliva of the affected animals. Thus the infection commences at the seat of injury and gains entrance into the body of a man by the penetration of the teeth of a rabid animal (dog or jackal). The virus with saliva is deposited at first at the bitten part and then absorbed by the lacerated nerve tissues and thereby becomes fixed. After being properly fixed

it develops and is conveyed from the peripheral nerves through the lymphatics to the central nervous system, medulla oblongata and also to suprarenal bodies. Very likely the virus is not carried by the blood stream. Hence the incubation, which is delayed, generally ranges from three to eight weeks or occasionally more.

Treatment.—The patients came to me a few days after the date of injury but never immediately. No signs of hydrophobia were noticed in them. So there was no time for ligaturing. Soon after their arrival, their wounds were washed with bi-chloride of mercury solution (1 in 1,000); and in order to encourage sufficient bleeding I incised the wounds and cut away the lacerated tissues and skinned up to the line of demarcation. The incised bitten parts were then cauterized, by applying hot bi-chloride of mercury solution (1 in 1,000), having soaked it in the same, dried the parts and then applied a cotton-wool mop, so shaped as to fit the crevices of the wounds, dipped in strong Carbolic Acid; immediately applied another mop of strong Nitric Acid, whereupon a slight explosive puff took place. After this, the Nitric Acid was neutralized with a saturated solution of bi-carbonate of soda and washed off with alcohol. Lastly, the wounds were dressed dry with

Potass Permanganate pulverized and Perchloride of cotton wool with a bandage lightly pressed, as a first dressing. The dressings were replaced on the following day; when, if the ulcers looked healthy with ordinary secretions, but without sloughings or other signs of sepsis, further application of the process was avoided; but in reverse cases the wounds were again cauterized with red hot iron or by repetition of the above-mentioned process. All cases of ulcers were subsequently dressed with wads of cotton, soaked in a mixture of equal parts of alcohol, water and tincture iodine and then bandaged. In order to permit of a reasonable secretion from the ulcers, healing under the process of scab was often avoided. Thus the latter dressings were daily changed in the aforesaid manner, till the ulcers were properly cured. Where either the bleeding or secretion was quite insufficient, it was increased by a suction or a cupping pump. Internally, a mixture containing Chloral, Hyoscine, Potas Bromide and Citras and Magnesia was administered and Morphia added when required. Where pain was excessive Caffeine and Sodium Salicylate were added to this mixture. Besides a 3 per cent. solution of Liq. Iodine was injected into the veins twice a

week at 1 c.c. doses and this was continued up to the end of the 8th week. Iodine treatment is very efficacious, both as intravenous injections and local applications in dressings. By its injection into the vein, it increases the number of white blood corpuscles, and consequently causes a hyperleucocytosis and thereby prevents the development of the virus in the nerve tissues or at the seat of injury. A 3 per cent. solution of the drug is the weakest,—being an absolutely reliable preparation for injection use.

The danger of hydrophobia is generally apprehended within the period of eight-weeks. So I often detained my cases up to that time, even where the ulcers or wounds were completely healed. Within this period I was more particular about the patient's movements and of their mental condition, and in every instance I kept their bowels free, as well as induced a free secretion of urine. In certain cases, if necessary, turpentine and soap enemas were practised.

During the course of treatment hot vapour baths were prescribed by placing the individual patient in a wooden chair and wrapping the body thoroughly with one or two large blankets, when the vapour from a boiling kettle was conducted through a tin tubing by placing its free end

into the blanket which soon to the hot vapour surrounding caused profuse sweating—due the body

Chart of 84 cases.

No. of Cases.	Situation.	Condition of injury.	Kind of Animal.	Duration of stay in Hospital.	Results.	Remarks.
41	Leg and Thighs.	Lacerated punctured wound caused by teeth.	Dog ...	On an average 7 weeks.	All cured.	
13	do.	do.	Jackal.	do. ...	do.	
9	Hand and Arm.	do.	Dog ...	do. ...	8 cured.	One died
4	Buttocks	do.	Dog ...	do. ...	All cured.	
3	Forearm and Hand.	do.	Jackal.	On an average 5 weeks.	One cured.	Two died
3	Face ...	Punctured wound caused by teeth.	Dog ...	On an average 6 weeks.	Two cured.	One died
2	Back ...	Scratch marks caused by teeth.	Dog ...	On an average 7 weeks.	All cured.	
7	Foot and Hand.	Ordinary scratches with nail and teeth.	Dog ...	On an average 4 weeks.	do.	
2	...	...	...	...	...	Came after developing hydrophobia and died within 24 hours.

Records of some important cases:—(1) R. Singh—a Hindu male of 47 years—was bitten by a dog on the right-buttock and left leg while answering the calls of nature in a neighbouring bush. That very dog injured one he-buffalo and another man. R. Singh, who preferred to come to the hospital for treatment, was cured and hydrophobia never developed; while the other man who took to indigenous treatment, came in for hydrophobia

and died within five weeks. The injured animal also expired within the same period.

(2) B. K.—a Hindu woman of 22 years—was bitten by a dog on her right-leg. This dog injured a horse as well. The woman was pregnant when bitten. Under the above treatment, no symptoms of hydrophobia appeared. She was perfectly cured, and delivered a full term child after her recovery without any hitch.

The animal died in the space of a month and a half.

(3) A. M. Khan—a man of 45 years—was bitten by a dog on his face while sleeping at night on a charpoy (Indian Bedstead). After injuring the man it bit a buffalo in his house. In the case of the man no symptoms of hydrophobia ever developed under this mode of treatment, while the animal died from the same injury within seven weeks.

(4) P. S.—A girl aged about 16 years—was severely mauled by a dog at the right foot and leg. The same animal injured another man in the neighbourhood. The latter, who preferred sorcery and indigenous drug treatment, succumbed under the symptoms of hydrophobia within a month and a half; while the girl who preferred to come to the hospital for medical aid was saved without any trouble.

(5) A boy named Nylmadhab Gir, aged 13 years, was injured by a dog at two places on his right thigh and one place on the left arm. This animal also bit three men and several other domestic animals. The boy came to the hospital for treatment, while the other three men preferred to undergo their country mode of treatment. When the boy was being treated at the hospital, information reached us that the other three injured men and

animals expired with symptoms of hydrophobia. Though this news was kept a secret from the boy, yet I think, somehow or the other, it reached his ears which terrified and made him nervous. Under the strain, his temperature rose to 103 degrees, his thoughts became vacant, and he would often remain dull. The accident happened during the rains. On the rise of temperature, I examined his blood and though I could not find any malarial parasite, I injected quinine, suspecting malaria, and gave him a large dose of chloral bromide and morphia for his restlessness. After three days his temperature came to normal. The boy was perfectly cured and no further unfavourable symptoms ever developed in him and he was discharged from hospital after three months.

Conclusion.—I. Out of 84 cases, altogether six deaths happened, of which two were of persons who came to the hospital after they had developed hydrophobia and when there was practically nothing to be done for them, as they hardly survived in the hospital for 24 hours. Out of the other four cases three remained only for a short period in the hospital for their treatment and then went away without any kind of information. Later on, when hydrophobia developed, they were anxious to

seek further medical aid, but this was futile, as their condition had too far advanced. The fourth and the last case proved fatal unfortunately, as time was short and I was required to proceed on leave on urgent business entrusting the charge of the hospital to an assistant. So I think that during my absence there was none to give adequate medical aid to the case, and on my return I was given to understand that the person developed hydrophobia and subsequently died.

II. From the cases noted, it will be observed that the system of treatment adopted above, somehow or other, had the power to check the virus of rabies from developing into hydrophobia. I have reasons to arrive at this conclusion from the nature of the results obtained in cases where this system of treatment was not adopted.

III. The Pasteur mode of treatment is not practicable in all dispensaries and it is often troublesome to induce patients to proceed to the respective institutions, as stated in the opening para of my note. With the view that others may benefit by this mode of treatment, when unable to send their cases to the proper institutions, I have laid before the medical practitioners this note for their perusal and guidance, when necessary.

THE UNIVERSAL LAW.

BY I. B. CHATTERJEE, S.A.S.,
U. P.

The law of substance, the universal law, law of persistence of matter and force or the law of constancy, whatever name may be implied, it is the supreme and all pervading law of nature. The true and only cosmological law, writes Ernst Haeckel (German Professor), is the "law of substance", whose discovery and establishment is the greatest intellectual triumph of the 19th century in the sense that all other natural laws are subordinate to it.

Under the name of "Law of Substance" there are two supreme laws of different age and origin: (i) the older is the chemical law of the "conservation of matter", and (ii) the younger is the physical law of the "conservation of energy". According to monism these two are essentially inseparable. The first law "Indestructibility of matter" was established by Lavoisier (1789 A.D.) and means that the sum of matter which fills infinite space is unchangeable. A body merely changes its form when it seems to have disappeared (*Rupanter* of Hindu cosmology); for instance ice, water, cloud, rain as well as a candle, etc. Nowhere in nature do we find an example of the

production or "creation" of new matter, nowhere does a particle of existing matter pass entirely away. The second law of "persistence of force" or conservation of energy means that the sum of force which is at work in the infinite space and which produces all the phenomena, is unchangeable. When the locomotive rushes along the line the potential energy of the steam is transformed into the kinetic or actual energy of motion; so in the whistling the sound waves of the vibrating atmosphere are conveyed through the tympanum and thence transferred by auditory nerve to the acoustic ganglionic cells in the temporal lobe which forms the centre of hearing.

It has been lately established that the whole marvellous panorama of life that spreads over the surface of our globe is in the last analysis transformed sunlight. Heat may be changed into movement of mass, into light or sound and then into electricity and so forth; but the accurate measurement of the quantity of force has shown that it is constant.

This law is applicable to the entire province of physiology, i.e., "organic physics", but the vitalistic biologists and spiritual philosophers give a stern opposition to it with the plea that the peculiar "spiritual forces" of

human nature are a group of free forces not subject to the law of energy while the existence of force without its correlative substance is a scientific absurdity. The old Kinetic theory of Newton and the new pyknotic theory of Vogt, both agree that all the different forces of nature are reducible to one common force; gravity, chemical action, electricity, magnetism, light and heat, etc. are only different manifestations, forms (or *dyna-modes*) of a single primitive force (*prody-namis*). This fundamental force is generally conceived as a vibratory motion of the smallest particle of matter (a vibration of atoms). Newton's Kinetic theory is that the atoms are separated dead particles of matter which dance to and fro in empty space and act at a distance, the attraction of two particles being in direct proportion to their mass and in inverse proportion to the square of their distance. The modern theory of condensation or the pyknotic theory of substance (J. C. Vogt's), means that the primitive force of the world (*prody-namis*) is not the vibration or oscillation of particles in empty space but the condensation of simple primitive substance which fills the infinity of space in an unbroken continuity. These minute particles of the universal substance, the centres of conden-

sation (pyknotoms), correspond to separate atoms of Kinetic theory. They differ, however, very considerably in that they are credited with sensation and inclination (or will movement of the simplest form) *i.e.*, with soul in a certain sense, in harmony with the old theory of Empedocles of the "love and hatred of the elements", *i.e.*, *anukul* and *pratikul* of Hindu cosmology. These "atoms with souls" do not float in empty spaces but in the continuous extremely attenuated substance (intermediate) which represents the uncondensed portion of the primitive matter.* By means of certain constellations centres of perturbation or systems of deformation great masses of centres of condensation quickly unite in immense proportions and so obtain a preponderance over the surrounding masses. The centres of disturbance or deformation exceed the mean consistency in virtue of the condensation form the ponderable matter of bodies; the intermediate finer substance which occupies the space between them falls below the mean consistency and forms the ether or imponderable matter. Owing to this division between mass and

*According to Hindu cosmology as well, every thing in the Universe has sprung up from and lastly disintegrates into the *Akash* (ether).

ether a ceaseless struggle between the two antagonistic elements takes place giving rise to all sorts of physical processes. The mass is ever trying to complete its condensation and thus in the attempt collecting enormous amount of potential energy, while the ether is ever resisting the further increase of mass and thus gathers the utmost amount of actual energy. Ether as a continuous substance fills the whole space and fully occupies the space between the atoms of ponderable matter and is not composed of atoms in its turn. There are very many theories attributed to it as it is an imaginary substance with no chemical properties.

The sum-total of force or energy in the Universe remains constant no matter what changes take place around us. The whole drama of nature apparently consists in an alternate repose and movement, yet the bodies at repose have an inalienable quantity of force (potential) as truly as those that are in motion (kinetic). The diminution of the one involves the increase of the other, so to say; one is transformed into the other, the sum total remaining the same. Physiology has also taken up and applied this law to the entire organic world. It shows that all the vital activities of the organism—without exception—are

based on a constant "reciprocity of force" and a "correlative" change of material or metabolism, just as much as the simplest process in lifeless bodies. Not only the growth and the nutrition of plants and animals but even their functions of sensation and movement, and some go so far as to say that their sense action and psychic life, depend upon conversion of Potential into Kinetic energy and *vice versa*. A time will come when Science will reveal the Supreme Existence the cause of all causes.

HEADACHE.*

By KAILAS SINGH, L.C.P. &S.

Headache is a symptom for the treatment of which a fairly large number of patients consult us every day. It is equally important for us to be familiar with the causes of the same so that our treatment may be quite accurate and successful; otherwise the administration of Aspirin without finding out the cause is exactly like shooting ducks in the dark.

The following are the important points to be noted:—

1. *Character*:—Headache associated with digestive disorders are usually throbbing in character and relieved by rest and increased by movement.

* Read before the C. I. Branch of the All-India Sub Assistant Surgeons' Association.

2. *Situation*:—Frontal in kidney diseases, vertical in constipation, unilateral in tumour, abscess and O.M.S. occipital in cerebellar diseases, meningitis and myalgia.

3. *Time of occurrence*:—(1) Headache on rising early in the morning may be due to a ill-ventilated room, to faulty adjustment of pillows slighter degree of astigmatism and hypermetropia.

(2) Persistent morning headache is due to gr: kidney (chronic int: nephritis).

(3) Evening headaches usually due to over mental work or eye strain which is commonly found in school or college students and office clerks.

(4) Night headache which disturbs the patient's sleep is due to organic diseases inside the skull.

4. *Accompanying symptoms will help much*:—For example, the association of

a. Vomiting and optic neuritis, papillitis or choked disc are in favour of brain tumour or abscess.

b. Nystagmus, scanning speech and intentional tremors in favour of disseminated sclerosis.

c. High tension, dilated pupils, steamy hazy look of cornea and disturbances in vision in favour of glaucoma.

The history of the case, the condition of the blood pressure (normal blood pressure is 120

mm. of mercury) and the examination of eye and urine in all cases of headache should never be neglected.

The causes may be better divided into 3 groups (1) Organic, (2) Toxic, and (3) Functional.

1. *Organic causes*:—

A. Diseases of the Brain.

1. Concussion.
2. Tumour and abscess.
3. Gumma.
4. Hydrocephalus.
5. Disseminated sclerosis.
6. General Paralysis of Insane.

B Diseases of the intra-cranial vessels:—

1. Haemorrhage.
2. Thrombosis.
3. Embolism.
4. Aneurysm.
5. Syphendarteritis.
6. Art: Sclerosis.

C. Diseases of the Meninges:—

1. Meningitis.
2. Pachymeningitis.
3. Syphilis.
4. Tumours.

D. Diseases of the skull:—

1. Tumour.
2. Abscess or growth into frontal, antral and mastoid sinuses.
3. Gumma.
4. Suppuration or tumour in the orbit.
5. Dental diseases.

E. Diseases of the special senses:—

Eye:—1. Errors of refraction.

2. Glaucoma.
3. Iritis, etc.

Ear:—1. Wax in the Ear.

2. Otitis media suppurativa.

Nose:—1. Adenoids.

2. Polypus.
3. Naso-pharyngeal catarrh (the commonest cause of headache).
4. Inflammation of Air Sinuses.

Toxic causes:—Exogenous.

Endogenous.

Exogenous:—

1. Foul air, as in close, ill ventilated rooms.
2. Poisonous gases as CO , CO_2 , CHCl_3 , $(\text{C}_2\text{H}_5)_2\text{O}$ etc.
3. Drugs as quinine, iron salicylates opium, etc.
4. Alcohol, tobacco and lead poisoning, and so on.

Endogenous:—

1. Uremia.
2. Gout.
3. Diabetes.
4. Gastro-intestinal disturbances.

a. Pyorrhœa Alveolaris.

b. Dyspepsia.

c. Constipation, etc.

5. Toxæmias:—Specific fevers Pyrexia, Phthisis, Suppuration, etc.

Functional causes:—

1. Abnormal blood pressure:—

High B. P. in Arterio Sclerosis and gr: kidney.

Low B. P. in Anæmia, Addison's disease, etc.

2. Venous congestion.
3. Excessive mental strain.
4. Pressure on the head:—

1. Heavy hats, at the same time ill fitting.

2. Carrying heavy weights on the head.

5. Persistent Noises—Gun headache.

6. Sea-sickness.

7. Journey in a train.

8. Voyage in a boat.

9. Menstruation.

10. Hysteria.

11. Hemisrania.

12. Epilepsy.

13. Sunstroke.

14. Eye strain, etc.

Treatment:—

Rational treatment or permanent treatment consists in removal of the causative agent.

Headache due to organic diseases of the brain calls for large doses of bromides, with antipyrine or aspirin and the application of the ice-cap to the forehead. Treatment must be adopted to relieve the increased intracranial pressure, as purgatives, counter irritation to nucha, leeching of the temple spinal puncture, etc

In syphilitic case Pot. Iodide answers the purpose very well.

Myalgia may be treated by massage. Toxic cases require eliminatory treatment. The bowels, skin and kidneys require stimulation in order to hasten the excretion of the poison. Congestive headaches require brisk purgation and vaso dilators.

Excellent results may be obtained by keeping the patient on good nourishing diet, fresh air, gentle exercise and by the administration of Glycerophosphates with Iron in cases of Anæmia.

Eye cases do very well on application of suitable glasses, trephining and iridectomy eserine drops and pot. iodide as the case may require.

Migraine may be treated by the administration of Analgesic drugs, electricity and other remedies.

Temporary cure may be obtained by a strong cup of coffee, rest, cheerful companionship, gentle fresh air, exercise, a drive in the evening, etc.

LIFE OF LORD LISTER.

BY SIR RICKMAN JOHN GODLEE,
BART., K.C.V.O., M.S., F.R.C.S.

(concluded).

THE CATGUT LIGATURE. APPOINTMENT TO THE CHAIR OF CLINICAL SURGERY IN EDINBURGH. DEATH OF HIS FATHER. 1867-1869.

* An Extract sent for publication by N.S. Narasimhan, L.C.P.S. (Bombay), L.M.P. (Madras.)

The best method of arresting hemorrhage in septic wounds presented a completely new problem. The ligatures had to come away in those days and were left long. Secondary hemorrhage was more frequent. Now it occurred to him: "If, however, the thread were steeped in some liquid calculated to destroy the life of the germs in its interstices, and the wound by which it was introduced were dressed antiseptically, the ends of the ligature being cut short, it might be left with confidence that its presence would not interfere with primary union, or occasion any disorder in the surrounding parts. He first put the matter to a practical test on December 12, 1867, by tying the carotid artery of a horse with a piece of unwaxed purse silk which had been steeped for some time in a saturated watery solution of Carbolic Acid. Healing took place by primary union. Six weeks after Lister had the opportunity of dissecting the part, and found the silk unchanged but bridged over externally by dense fibrous tissue. Encouraged by this success he tied the external iliac for femoral aneurism in a lady aged 51 years. The ligature was of silk prepared by steeping it for two hours in strong liquefied Carbolic Acid. Before applying it, the superfluous acid was removed by transferring the silk to a solution of one part of

Carbolic Acid in 30 parts of water. The lady made a perfect recovery, but died ten months after from aneurism of abdominal aorta. He made a dissection and found that the ligature was found in a tiny cavity containing a minute quantity of yellow material that looked to the naked eye like thick pus. This was a new observation and he says. "Indeed, considering the organic origin of silk, the remarkable thing seems to be, not that it should be absorbed by the living tissues, but that it should resist their influence so long." The microscopic examination showed a few pus cells. If there were even a remote chance of silk, when used antiseptically giving rise to an abscess, this was a serious objection to its employment. So he next turned his attention to the discovery of a more suitable animal material, one more certainly and more readily absorbable than silk; and the first that occurred to him was catgut which had been used before, but had always been given up as unsatisfactory. Commercial catgut is made from the intestine of sheep and is the submucous coat. In the Christmas of 1868 he tied the carotid artery of a young calf with catgut after soaking it for four hours in a saturated solution of Carbolic Acid. A month later the dissection showed that catgut was quite absorbed and was replaced by

new tissue. Although this experiment was a success it was evident that ordinary catgut was untrustworthy without further preparation, because, as Lister feared might be the case, it was absorbed too quickly, and because when moistened with water or with animal fluids, it became so soft and slippery that a knot tied upon it yielded to the slightest traction. These were serious defects. By a strange coincidence Lister's next method of rendering the gut antiseptic made it at the same time both stronger and less slippery. He placed it in a mixture of liquefied Carbolic Acid and oil. The liquefied Carbolic Acid contained a small amount of water, and it turned out that this modicum of water enabled the oil to act upon the catgut in such a way as to produce seasoning effect which made it stronger, less slippery and more slowly absorbable by the tissues. This proved excellent and trustworthy and was sold in bottles containing Carbolized Oil. This was the "Carbolized Catgut Ligature" in common use for more than ten years. The disadvantages of this method of preparation were that it took a minimum of two months. Manufacturers cannot be expected to do this especially in times of demand. Many failures were reported. Lister prepared his own catgut. Many reported good results.

Lister doubted the trustworthiness of his preparation. His experiments on catgut lasted throughout the whole of his active professional life; indeed, the very last experiment, dated 25th July, 1899, was on catgut. He learned from one of his fiddler patients that the trustworthiness of catgut depended upon the seasoning which comes with age. In the course of his endless experiments, Lister tried many substances, tannin, chromic acid, chromic alum with sublimate, bichromate of potash and others. Not only had the texture of the gut to be tested, but also the length of time required for its absorption by the living tissues. For, over-preparation was as bad as under-preparation; over-prepared gut was not absorbed at all and came away like a foreign body. In 1881 he recommended Chromic Acid and Carbolic Acid for the preparing medium. But his final process consisted in treating the gut with Chromium Sulphate and Corrosive Sublimate. This was in 1908. It is still probably the best of catgut ligatures. Catgut is not dissolved by the fluids in which it was bathed.

Syme on account of his ill-health resigned in the summer of 1869 and Lister was the candidate. Simpson suggested actively that the Chair should be abolished. The Edinburgh stu-

dents (127 signed) sent a letter requesting Lister to stand for the election and he was elected on August 18th, 1869. Lister's father died in September, 1870, and Lister was with him at Upton. The father and the son depended on each other much to the good of the world in scientific matters.

PROFESSOR OF CLINICAL SURGERY IN EDINBURGH. DEATHS OF SYME AND SIMPSON. 1869-1870.

Simpson died in May, 1870, at the age of 60, and Syme on 26th June, 1870. Lister's bitter opponent was removed and by common consent Lister became the great Surgeon of Scotland after Syme. His friends were Sir Robert Christison, the celebrated toxicologist and physician, and Douglas Maclagan. Lister's surgical colleagues were Patric Heron Watson and James Spence. William Turner was Principal, Mathews Duncas Gynecologist. On November 12, 1870, he became a "Foreign Associate of the Society of Medicine of Norway", and on December 1871, he became an honorary member of Medical Society of Leipzig. Only in Edinburgh at that time the course of Clinical Surgery formed a part of the regular curriculum. Notes of the course of 1872-73 taken by Sir Watson Cheyne, then Lister's House Surgeon, are placed in the

Library of the Royal College of Surgeons of England.

EARLY BACTERIOLOGICAL WORK. FIRST CORRESPONDENCE WITH PASTEUR. 1870-74.

Lister spent his leisure on a good deal of bacteriological work and before Koch's solid media his liquid medium and the methods were followed. He invested hot box, the beginning of the autoclaves. The six papers dealing with bacteriological subjects were published between 1873 and 1881. He found out that the products of the fermentation of an albuminous liquid may be inodorous, or at least devoid of the smell usually associated with putrefaction. This advance of thought from thinking of putrefaction to thinking of infection, was of the utmost practical importance. Lister communicated with Pasteur in 1874 giving an account of his bacteriological work. This was the beginning of an acquaintance which ripened into friendship. Pasteur corrected his mistakes, which Lister owned later on in another communication.

THE SPRAY. GAUZE-DRESSINGS. DRAINAGE.

Pasteur's and Tyndall's work proved conclusively the dangers of infection from organisms from air. In their eyes, all germs were pathogenic. He wanted to render the air innocuous by means of an

antiseptic carbolic spray. The spray producer underwent a process of rapid evolution. It was recognized by Lister himself as an evil. Those who had an idiosyncrasy to Carbolic Acid among Lister's followers did not use and it is strange that their success did not cast more doubt upon its efficiency or necessity. Before the introduction of the spray it had been Lister's custom to irrigate the wound more or less constantly during the course of an operation with Carbolic Acid lotion, one part to 40 of water. He publicly recommended the use of spray in 1871. The spray was used all over the world for many years. After 1880 many surgeons abandoned its use, but Lister continued to employ till 1887. Why was it relinquished? Lister was aware of the physiological properties of peritoneum of constant exudation and absorption and any antiseptic would increase the exudation. Wells and Keith have already reduced the mortality in ovariectomy to 16 per cent. by cleanliness and boiling sponges. Spencer Wells had read Pasteur's writings and accepted the germ theory of disease; indeed it almost seems as if he had grasped the antiseptic principle before Lister though he did not follow up the clue. Metchnikoff's marvellous discovery of phagocytosis was announced in 1883 and this led to the diminished use of

antiseptics. It was found out that the pathogenic germs were not plentiful in the air. In fact it was becoming more and more evident that the air was after all not the principal source of wound infection—not nearly so great a source of danger as the patient's skin, the surgeon's hands, the unsterilized sponges and instruments and particular dirt of all kinds. In 1887 Lister finally abandoned the spray. Now he surrounded the seat of the operation with widespread towels wrung out of an antiseptic solution.

Lister had in the earliest antiseptic days employed a material capable of absorbing the discharge. First he used lint soaked in carbolized oil, but he very soon gave up the absorbent dressings altogether. Then putty and various non-absorbent plasters were used. Lister was led to modify his views with regard to absorbent dressings by hearing reports from various quarters of the efficacy of oakum as an antiseptic dressing. Oakum consists of old rope picked to pieces and treated with Stockholm tar (which consists of creasote and other hydrocarbons but not Carbolic Acid). Each fibre of it is "imbued with an insoluble vehicle of the antiseptic and thus even if the discharge soaked through and through an

oakum dressing, decomposition would not be able to spread along the moist track to the wound until all the antiseptic substances had been dissolved out of it and washed away. He tried oakum first on superficial sores, interposing the protective to prevent irritation, and said that he found it to approach the ideal he had long in view; but it was dirty, sticky and odoriferous. So Lister set to work to apply what he called "the oakum principle" whilst eliminating these drawbacks. He selected the muslin gauze and used Carbolic Acid gauze. The dressing consisted of a pad of eight layers and a layer of thin mackintosh was placed between the seventh and eighth layers to prevent the discharge from soaking straight through opposite the wound, and in order to force it to travel to the edge of the dressing before it could be contaminated by germs. The material chosen for the mackintosh was "hat-lining" which was of the same colour as the gauze and hence Lister decided to stain it pink so that the dressing should not be applied inside out. Hat lining is still used as a covering for splints and fomentations and still religiously dyed pink. This was the antiseptic gauze *par excellence* for many years, in fact till 1889, when after many trials of other materials, it was permanently replaced by one charged

with the double Cyanide of Mercury and Zinc, which is now the dressing commonly employed by those who use the antiseptic methods.

Lister first used volatile antiseptics, but its deterioration and the weight of the evidence brought by Koch and others of the potency of the germicidal and inhibitory powers of corrosive sublimate and other non-volatile salts of mercury led Lister to adopt ultimately a non-volatile antiseptic in the gauze (1884). Before he began the work with sublimate, it had been much used in Germany, principally in the form of "Sublimate Wood-Wool", that is, pine wood mechanically reduced almost to a state of powder and charged with the sublimate. These were the disadvantages of the sublimate: (1) Serum Albumin formation, (2) weakening of the action of the drug, and (3) proved irritating to the skin. Then he tried the mixture of horse serum and sublimate called "The Sero-Sublimate Gauze" in 1884. It had its disadvantages as somewhat harsh, not very absorbent and horse serum not always available. Lister gave all the antiseptic salts of mercury a trial. He later on found the double cyanide of mercury and zinc which proved to be the most satisfactory of all the non-volatile antiseptic substances

Lister ever used for incorporating in a gauze.

The dye mauveline fixes the powder to the gauze well. No irritation is seen if the gauze is dipped in carbolic lotion instead of sublimate lotion which decomposes it. These experiments were spread over a period of nearly forty years. About this time Lister did much to familiarize the profession with the advantages of India-rubber drainage tubes. They were originally introduced in 1859 by Chassaignac. It was not known to Lister who first used in 1871 on Queen Victoria. Lister began to use larger bore tubes; the outer end was always cut obliquely that it was always flush with the surface of the skin. He also attached loops of silk to the outer end in order to keep the tube from slipping either in or out when the dressing was firmly bandaged over it.

Lister having heard that Boric Acid is used in the household as an antiseptic, began to use it as an antiseptic in 1871. Taking advantage of its far greater solubility in boiling than in cold water, Lister succeeded in introducing a very large amount of Boric Acid into the boracic lint, much more than would be at once dissolved and washed away by the discharge from a wound the temperature of which never

reaches 100 degrees F. Like so many of Lister's principles this is also forgotten. It is now used for "Boracic fomentation". The hotter the water and the well wrung it is, it becomes equal to ordinary lint.

RECEPTION OF LISTER'S TEACHING AT HOME.

Many were the old-fashioned men who would not understand. Even distinguished men did not understand the principles as Sir John Erichsen and Sir James Paget. The reasons for Lister's countrymen for not appreciating his teachings are the doubts whether the diminution of hospital diseases was due to improved hospital hygiene or to the antiseptic system of treatment.

RECEPTION OF LISTER'S TEACHING ABROAD.

The German system of medical education was in the middle and before the middle of the 19th century fundamentally different from the English. Clinical instruction formed a regular part of University teaching. In England the doctors learned their clinical medicine and surgery by serving as apprentices and by walking the hospitals.

Their one aim was to obtain a license in practice. Even thirty or forty years ago the accepted standards of domestic cleanliness on the continent was too low and

Lister's discoveries were a necessity for them and they appreciated it. Thiersch was the first German Surgeon to adopt this as early as 1867. Richard Von Volkman was another great advocate. His hospital had not touched the knife for twenty-five years before even for the very small operations. As Krause called him he became Lister's most devoted disciple. Stromeyer of Hanover although practising subcutaneous surgery appreciated Lister's discoveries.

Von Bergman succeeded Langenbeck in 1882 and became a great surgeon. He became the great apostle of aseptic surgery and in 1892 his methods were formulated and described by his assistant, Dr. Schimmelbusch and they have been widely adopted throughout the whole civilized world. In 1874 at Von Volkman's suggestion all Lister's papers were translated into German by Thamayn of Halle. Professor Billroth of clinical surgery at Vienna (1867-73) was on friendly terms with Lister but was doubting the principles. His disciples who went to Edinburgh became converts. Esmarch of Kiel, Tillmans of Leipzig, Konig of Gottingen, Albert of Vienna, Trendlenberg of Bonn, all of them adopted and upheld the antiseptic treatment. Carl Rehyer adopted antiseptics in the Russo-Turkish War of 1878 with spray,

etc. Rehyer spent before this four weeks in Edinburgh. Lister's old friend Tilanus of Amsterdam who died in 1914 and Kocher who is still the Professor of clinical surgery at Bern, Switzerland, since 1872 did much in their countries. Antiseptic principles were not understood in France till 1880 except the four Surgeons who all died in 1914, Terrier, Perier, Berger, and Championnere. Lucas Championnere published in 1876 the first complete account of the antiseptic surgery. In the Franco-German War his chief prevented him from bringing antiseptics which were not used although patients were dying of septic disease. In Italy all surgical reform was slow, and the adoption of the antiseptics was belated. In 1878 there was only one who used it. Belgium was indifferent. America was far behind, and in 1877 there was only article on the antiseptics.

VISIT TO CONTINENTAL HOSPITALS. EDINBURGH PROFESSORSHIP. 1870-76

Ten publications appeared: urged the use of the antiseptics in 1870 in Franco-German War. The use was not a great success, but still much good resulted. The years 1873 and 74 saw many bacteriological and clinical improvements from Lister. The most important events of 1875-76 were a continental journey

and his appointment to the General Medical Council. The former brought him into personal contact with the chief German surgeons of the day, and the latter made him intimately acquainted with many leaders of the Medical Profession in London. He was well received in Germany by Von Nusbam, Prof. Thiersch, Liebig and Volkman Langenbeck. The demonstrations at the B. M. A. in 1875 at Edinburgh convinced provincial surgeons, but in London the effect was insignificant.

EXPERIMENTS ON ANIMALS. THE GENERAL MEDICAL COUNCIL. 1875-76.

In June 1875, Sir Henry Ponsonby, the Queen's Private Secretary, wrote a letter to Lister requesting him to make an authoritative statement opposing vivisection before the then appointed Commission should have made their report. Lister's answer did not comply with H. M.'s request and Lister gave evidence before the Royal Commission on July 5th, 1875, and he stated that legislation was uncalled for. The Commission reported in favour of legislation and a bill was introduced in the upper house on May 15th, 1876. Lister was now appointed, in May 1876, to the G.M.C. in place of Christison, the first appointment of a surgeon of the

five crown nominees since 1858 (G. M. C. formation). The G. M. C. appointed a Committee of which Lister was the Chairman and proposed against all legislation whilst suggesting various amendments. The final clause excludes invertebrate animals and not cold-blooded animals. Licensed persons should not experiment on unlicensed premises.

GRADUATION ADDRESS, EDINBURGH. AUGUST, 1876.

He set before the students a very high ideal. "Am I clear in my conscience that I bring to bear upon this case as much science and skill as are attainable in the present state of our human knowledge?" He urged on the importance of taking a year of additional clinical work, not to have prejudice, and not to rush into print early, and severely criticized anonymous medical literature, and concluded: "Gentlemen, It may seem to you that these imperfect pieces of advice indicate to you that there lies before you a somewhat steep and thorny path; and truly if we had nothing but pecuniary rewards and worldly honours to look to, our profession would not be one to be desired. But in practice you will find it to be attended with peculiar privileges; second to none in intensive interest and pure pleasures. It is our proud office to tend the fleshy

tabernacle of the immortal spirit, and our path, if rightly followed, will be guided by unfettered truth and lore unfeigned. In the pursuit of this noble and holy calling I wish you all God-speed". In September 1876, Lister attended the fifth International Congress at Philadelphia, and was the President of the surgical section. Gross of Philadelphia, Sayre of New York and Lister took part in a discussion of Hip Joint disease. At Boston he met Bigelow, where he met a great ovation from his class. On February 10th, 1877, Sir William Fergusson died when he was the Professor of clinical surgery in King's College Hospital, London. Lister was elected to the additional chair of clinical surgery in June, 1877. He had strong views on medical education. The Medical Act of 1858 was disfigured by one blot. It provided that a single qualification, Medical or Surgical, should admit to the register. The G.M.C. proposed to remedy this defect by one system of examination to test the proficiency of the student in Medicine, Surgery and Midwifery.

This project was never carried out. When he left Edinburgh, he was conferred the honorary degree by the University.

LONDON, 1877.

Lister's private practice became considerable but never re-

ally large. He was not a great favourite with doctors, but he was unpunctual and he left the amount of the fee to the discretion of the patient, which made the doctor look foolish, and he did not trust the after treatment of operations to general practitioners who looked upon this as their privilege. He was assisted entirely by Godlac and Cheyne in London till they became full surgeons. Lister brought four men from Edinburgh to form the nucleus of his staff at the hospital—Watson Cheyne, John Stewart and two others. King's College had very few students who did not care for his clinics. In 1877 when he wired the fractured Patella, a distinguished London Surgeon was waiting to prosecute him for malpractice if the patient died, but the patient recovered with an aseptic course. He was made a member of the pathological society and delivered an address with Murchison as President.

CONGRESSES AND ADDRESSES.

1878-1881.

He gave an address to Harveian Society in 1878 and in that year he was the President of the Exhibition on matters connected with the Medical profession in Paris. In 1879 he attended the sixth International Medical Congress at Amsterdam and was well received. In 1880 we hear

of Robert Koch's—Lister followed up his work—use of stains, solid instead of fluid media and isolating organism from mouse suffering from Septicæmia. Pasteur found out the means of protection against disease by vaccination with attenuated viruses in fowl cholera. This was the beginning of the scientific study of vaccines, antitoxins and serums. The seventh Congress met in London in which he took a leading part in the pathological and surgical sections. Jenner, Paget, Pasteur, Virchow, Koch, Raymond, Volkmann, Billings, Huxley were all present.

ANTISEPTIC AND ASEPTIC SURGERY.

1878.—Surgeon-in-ordinary to Queen on the death of John Hilton.

1880-1883.—Royal Society Council.

1880.—L.L.D., Cantab. D.C.L. Oxon. Foreign distinctions in abundance.

1883.—Baronet. Lister was in theory opposed to such rewards for scientific distinctions and very often spoke of a plain John Hunter.

1881.—Boudet price of 6,000 francs for his application of Pasteur's researches in the art of healing.

1885.—The Prussian "Order Pour Le Merite", being restrict-

ed to 30 Germans and 30 foreigners.

By 1890 the whole Medical Press and Profession were at one with him. He played a leading part in public matters. He was against the admission of women to medicine.

1881-82.—President of the Clinical Society. In 1881 Lister was very much interested in Laryngoscopy which he practised on himself since 1861, when he was Syme's House surgeon. He noticed the CHCl_3 Stertor was relieved by pulling out the tongue very forcibly whereas a gentle pull will have no effect. He saw on sheep that this stertor during CHCl_3 narcosis was caused by Aryteno-Epiglottian folds. He showed a case along with Burneyeo, a case where he removed a laryngeal tumour.

In 1884 was his Address to Hunterian Society. The Medical Society founded by Father Gill and Lettsom in 1773 particularly attracted him. He delivered the annual oration on no less than four occasions. He gave the pick of his library to this society. Since 1883 he left off the bacteriological field and was working to show how surgical usefulness can be extended. Cutting down upon, resetting and wiring badly united fractures of the bones was practised by him. In 1873 he first used silver wire

for fractures of the Olecranon. In 1884 he addressed the Military Medical Society and cemented the relations between Civil and Military surgeons. In 1880 he was elected as member of the Council of the Royal College of Surgeons. Only in 1884 the Royal College of Surgeons instituted the examination in all three subjects, Surgery, Medicine and Midwifery. In 1886 he was appointed as the member of the Committee of Management of the Conjoint Board. He was against the colleges giving "M.D." as London M.D. was very difficult. In the next year was his Bradshaw lecture on "the present position of antiseptic treatment in surgery."

THE LISTER INSTITUTE.

In 1889 Lister spoke at a meeting to collect funds to present to Pasteur Institute, Paris, and to the relief of the poor persons to go to Paris; he sent £2,000. This Committee thought of opening a similar institute in England and after great opposition from the authorities due to anti-vivisectionists, the British Institute of Preventive Medicine was incorporated on June 5th, 1881, Lister being the first chairman. Early in 1893 work was started. Dr. Armand Ruffer was the director from 1893-98. The introduction of the treatment of Diphtheria by anti-toxin in 1893

increased the work. Through Lister's influence funds and sites were collected and a new building was erected which was formally opened in May 1897, which was the year of the centenary of Jenner's discovery of vaccination. In March 1897 a meeting was held in which Lister made a powerful speech to commemorate the name of Jenner according to the amount of money collected. Only £5,700 were collected; still it became known as "Jenner Institute of P.M." Unfortunately this change brought it into collision with a firm trading in calf-lymph and so in 1903 it was changed to "Lister Institute of P.M." much against his will. The Institute had no funds. In 1900 Lord Creagh came forward with a noble gift of £2½ lakhs. The government was entrusted to only seven members (three for Lord Creagh's representatives) Lister was the first Chairman of the governing body and afterwards became President of the Institute. The building was finished in 1910. His work on Tubercle, Cattle disease, Manufacture of calf-lymph and investigation of Plague was done here.

Professor Bacelli, the chief representative of Italy and the main author of the great clinical institute in Rome, arranged to have his effigy in bas relief in the

entrance to the Surgical department. The bas relief occupies the tympanum of one of the two principal facades of the Polyclinico Umberto. Lister is the central figure standing in a marble theatre by the side of a table on which reclines a patient recently operated on. He is expounding the case to the audience, while his staff of assistants and nurses occupy themselves with various duties in the background. In 1891 he delivered a lecture to the Edinburgh students for the receipt of Cameron Prize. In 1891 he was the President of the section on Bacteriology at the International Medical Congress, London, and delivered an address. In 1892, at the age of 65, he was superannuated and retired from Professorship, but continued in charge of wards till 1893 when he left off private practice also.

Pasteur was 70 years of age and a great ceremony took place on December 17th, 1892, at the Sorbonne; 2,500 persons were present; the President of the Republic, all ministers, ambassadors and delegates from the world presented and laid their addresses. Lister was the representative of the English Nation representing the Royal Society of London and of Edinburgh. When Lister finished the address Pasteur rose to embrace Lister. The embrace of these two men was like a living picture of the brotherly unity of

science in the relief of humanity. Towards the close Pasteur said: "You, lastly delegates from other nations, who are come from so far to give a proof of sympathy with France, you bring me the deepest joy which a man can feel who believes invincibly that science and peace will triumph over ignorance and war, that men will unite not to destroy, but to build up, and that the future will belong to those who have done most for suffering humanity. And here I appeal to you, my dear Lister, and to you all illustrious representatives of science, of medicine, and of surgery. Young men, young men, put your trust in these sound and availing methods of which we still know only the first secrets. And all of you, whatever calling you may follow, do not let yourselves be touched by disparaging and barren scepticism nor discouraged by the sorrows of certain hours which pass over a nation. Live in the serene peace of your labs and libraries. Say, to begin with, "What have I done for my own improvement?" Then as you go farther, "What have I done for my own country?" Up to that moment, it may be, when you shall have the immense happiness of feeling that you have contributed something to the progress and good of humanity. But whatever favours that life

may give, or refuse, to a man's work, he must, as he draws near to the end of it all, have the right to say, "I have done what I could". In 1893 Lister was elected as the associate of the "Academic de sciences" after the death of Sir Richard Owen.

After this Sir and Lady Lister went to Italy on a holiday where Lady Lister died of Pneumonia. They had no children and Lister's life was completely changed. She was his only intimate daily companion, watching over him with almost a mother's care. She entered into his scientific interest with intelligent interest and was never tired of sitting by his side, taking down notes to his dictation, waiting patiently for an inspiration. The commonplace books are mostly in her handwriting. She was a good linguist, and had a love of birds and flowers. Her striking characteristic was to make all who know her respect and love her.

1893-1896.

His sister-in-law, Miss Syme, continued to live with him. As he was very depressed and had no work to do he was elected as the Foreign Secretary of the Royal Society and in 1895 he succeeded Lord Kelvin as the President of the Royal Society which he held for the usual period of five years. Only once before a surgeon (Sir John Bro-

die) had been the President of the Royal Society. He was elected as a Fellow when he was 31 years of age. He delivered the annual address and the presidential speech at the Royal Society dinner. The addresses are a monument to the width and depth of his reading and thinking, touching Plague, Glycerine Vaccine, Malaria, Rinderpest, etc.

The duties of the President kept him pleasant. In 1894 he delivered an address to the Glasgow University Students' Society. The experiments on the avidity with which epidemics and almost oily matters absorb Carbolic Acid were published in 1908 and have a great practical bearing on Surgery.

His portrait was presented to the Royal College of Surgeons in 1897 by friends and by his old teacher Sir John Erichsen to the King's College. There are portraits in the University of Edinburgh, Glasgow, the Lister Institute and the House of the Royal Society. In 1896 he was made the President of the British Association at Liverpool, and delivered an address on "The interdependence of science and of healing art." This was Lister's great address on the subject of antiseptics.

Pasteur died in September 1895 and a beautiful chapel was prepared for him in the precincts of

the Pasteur Institute. Lister was present at the ceremony in January 1896 and paid this tribute to his memory.

HOUSE OF LORDS, 1897-1900.

Lister was elevated to the Peerage in 1897, the first medical man; it was on behalf of Science. He was congratulated by many, Lord Kelvin, Weir Mitchell of America, Madam Pasteur, etc., etc. In 1897 he was appointed the Chairman of the Committee of King Edward's Hospital Fund for London and continued till 1902 when he retired. He spoke only twice in the House of Lords. There was a great opposition to his views and he took the next best view. In May 1897 he was given a dinner by his old house-surgeons, dressers and clerks numbering 130, and in that year he attended the B.A. and the B.M.A. meeting at Toronto which conferred the L.L.D. on him. At Montreal he was given a dinner, and toured around Canada with Michel Foster, the distinguished Physiologist. On June 15th, 1898, he received the Freedom of Edinburgh with Lord Wolsley. Then he was received by the College of Surgeons. In 1899 was "Virchow reception," Virchow is the father of modern Pathology. He gave out in 1858 the doctrine that every morbid structure consists of cells which have been derived

from pre-existing cells as a progeny. In his 70th year he delivered the second Huxley lecture and was given a hearty welcome. Lister made an important speech at the opening of Thompson Yate's Laboratory at the University of Liverpool.

In July 1901 the Second Tuberculosis Congress was held in London. Koch announced that Bovine and Human tuberculosis are different and that there was practically no danger of infection of human beings from meat, butter and milk of tuberculosis cattle. Lister was in the chair on this occasion and pointed out the flaws in the experiments of so great an antagonist as Koch.

At his direction in 1901 and 1902 experiments were conducted on the above at Lister Institute and were found to be against Koch's conclusions. He was now 75. He began to be afflicted by old age, Rheumatism and Gout and he was not coming out of his study outside. He lost sight of his fellowmen. Just before this he went to South Africa, the last of his voyages which benefited him a little.

On June 24th 1902, he was present at the consultation before the operation on King Edward by Sir F. Treves as Sgt. Surgeon. On Coronation he became Privy Councillor and received the Order of Merit. In November

he was awarded the Copley medal of the Royal Society, and in December the King of Denmark made him Knight of the Grand Cross of the Order of Damberg. In 1903, he was made Honorary Doctor of Science, by London University.

His health was failing, but now he wanted to edit all his papers, which he could not do; even detailed instructions he could not write down. At the suggestion of C. J. Martin his 80th birthday was to be celebrated by bringing all his writings into a book form and a Committee of five was appointed by the Profession. The collected papers appeared at last in June, 1909, in two sumptuous quarto volumes in five parts. Lister's 80th birthday was celebrated all over the world. Sir Jonathan Hutchinson presented an address on behalf of the Royal College of Surgeons, and Prof. Tilanus of Amsterdam and Madson of Copenhagen on behalf of other countries.

On June 28th he was presented with the Freedom of the City of London and with this he finally passed away from public view. The last honour was the Freedom of Glasgow which he did not personally attend and his friend Cameron read a letter from him. In 1908 he sent for publication all his unpublished scientific papers and his last

scientific article was on Catgut. In 1909 his sight and hearing became much impaired. In August 1908, his brother's death was a shock. Only a sister of the large family was left, whom he could not meet. In 1910 and 1911 he was in bed, and sometime before the end he was unconscious and he passed away in February 10th, 1912. There was general desire that he should be buried in Westminster Abbey, but he left clear instructions that he should be laid to rest by the side of his wife. On February 16th there was funeral service in the Abbey attended by continental representatives. In the Westminster Abbey there is a marble medallion which will recall his face and name as long as the Abbey stands. It is fittingly placed with four others of the most distinguished men of science of the age, Darwin, Stokes, Adam and Watt.

Lister was the founder of the modern deliberate method of operative surgery. His manners with strangers and with young people had something of old fashioned dignity, but his relation with youngsters was quite cordial. He commanded the respect and enthusiastic devotion of the students. He was recognised the champion of students' rights.

He had many friends and admirers. Mathews Duncan, W. Turner, H. Cameron and

Roberts were thick ones. They were all possessed of great intellectual power and accuracy of thought and expression. Slovenliness was to them a sin. They were pure-minded and transparently honest. To each of them quackery in all its forms was anathema and there was one other bond not often spoken of but well recognised, a simple, it might be said a child-like, faith in Christian religion.

LISTER'S CONTRIBUTIONS TO GENERAL SURGERY.

Amputation of thigh (1858-60).—Modification of Carden's operation. Lister's was a circular amputation with a minute posterior flap, the sole object of which was to secure a neat scar. The incision was made over the anterior tuberosity of the tibia. The femur was divided at the level of the upper border of the patella, when the knee was flexed that is immediately above the articular cartilage. It is superior to any operation done in close proximity to the knee joint. Stump is sound not so long as is the case after amputations through the knee for fitting artificial limb. It interferes very little with the circulation and hence useful in senile and diabetic gangrene.

Excision of wrist (1865).—He was encouraged to take up the subject by pondering over a compound fracture of the wrist that

had occurred in 1863. He had sawed off the ends of Radius and Ulna which had been forced out of the wound on the front of the forearm, after tearing their way roughly through flexor tendons. He attributed the almost perfect result obtained in a great measure to methodical passive movement begun at a very early stage.

Amputation at the hip (1865).

—Before this the old flap operation with lightning speed was the rule. He propounded and did "instead of amputating through the hip, to amputate the soft parts high up in the thigh and then dissect out the head of the bone. Amputation at the hip is very futile, not that the joint was opened into but because the wound is so large." He always practised sawing the bone below the trochanters, then tied the vessels and afterwards disarticulated the head whilst holding the bone with Lion Forceps. The correctness of this practice was confirmed by Mr. Furneaux Jordon in 1897 by his operation called ext. racket incision. In order to control the bleeding he employed at first his own aortic tourniquet and then he used Esmarch's method of elastic compression. Lister's operation led to the modern operation of anterior racket incision, though taking long to perform, involves less loss of blood and, as is car-

ried out with great gentleness, has robbed his formidable procedure of any danger..

Bloodless operating.—Since 1863 throughout his practice Lister employed to empty the limb of blood by simple elevation. Not one drop of blood escaped, while by the Petits tourniquet there will be a good splash of blood. German Surgeon Esmarch's bandage was announced in 1873.

Carcinoma of the Breast.—Even in 1870 it was commonly taught in London and elsewhere, that it was dangerous to remove the pectoral fascia and unjustifiable to clear the armpit of cancerous glands on account of the risk of septic infection. Small and incomplete operations only were done. The first large radical operation planned on anatomical principles was that performed by Lister in 1867—the first that he did on his own relation. At first the breast was removed by a very long transverse incision extending from the sternum to the posterior fold of the axilla. After stopping all bleeding, a vertical incision planned to lie midway the axillary folds was carried up from near the outer end of the first incision as far as the apex of the axilla. The edges of the two pectorals were then defined and the pectoralis major was cleaned right up

to the clavicle. The edge of the Lat. dorsi was clearly defined and cleaned almost to its insertions.

Surgery of the bladder and urethra.—He introduced three improvements in the treatment of stricture. First he used straight metal bougies about 6 inches in length with which he dwelt with the anterior part of the canal. Secondly he devised carved metal bougies which tapered towards the point. The particular curve was that recommended by Syme. Lister's addition was the olive headed point. Thirdly he was doing the Wheelhouse's operation which was published by Wheelhouse in 1870. It was suggested by Syme's well-known operation. In his own words, "The surgeon can with perfect facility look into the urethra at the affected part and then easily do that which otherwise would have been difficult if not impossible."

He was probably the first to abandon lateral lithotomy as routine practice in favour of the high or abdominal operation which had almost completely fallen into disfavour. For the removal of stones from the prostatic urethra he devised a long pair of forceps curved like a catheter. The shanks crossed twice, by which device when the handles were slightly separated, that part of the instrument which

ELECTRICITY IN GENERAL DISEASES.

By T. N. SARKHAL, S.A.S.,
Radiologist, Howrah General Hospital.

occupied the bulbous part of the urethra became appreciably smaller, whilst the blades which were fenestrated, opened widely enough to grasp such small stones as alone are found in the prostatic part of the canal. It was an efficient instrument.

Surgery of the bones and joints.—He was the first to operate on un-united fractures (1868).

He treated recent fractures of patella, and he removed loose cartilage from knee in 1870 and treated tuberculous joints by free incisions before the operation of dissecting out synovial membrane came in 1884 by König. He treated a Ch. Synovitis by making a small incision and inserting a drainage tube. He was the first to operate on knock-knee and he used ordinary carpenter's and sculptor's tools with wooden handles.

Blood vessels.—Varicose veins, varicoceles, nævi were treated with injection of Carbolic Acid; all now abandoned. He himself practised varicocele operations, on varicose veins as soon as it was suggested. He also treated internal piles in a similar fashion. This is the only one of his methods for treating vascular tumours by injecting Carbolic Acid in a modified form which has survived to the present day.

Anaemia and Debility.—In many forms of anæmia and in chlorosis we have to deal with simple forms of defective nutrition in which electrical stimulation suffices to bring about a change for the better. Electricity is not much resorted to for the treatment of these conditions, because good results can usually be obtained by other means. In obstinate cases where ordinary treatment does not answer satisfaction electrical stimulation with rhythmic currents should be tried. By these methods the metabolic processes of the patient can be so efficiently stimulated that increased appetite and vigour can be secured for the patient with unproved colour, and a marked gain in weight. In chlorotic patients under these conditions the catamenia will probably be re-established. Excellent results have been seen to follow treatment by electric baths when anæmic patients were not doing well under iron.

When the recovery of patients after serious illness is slow and unsatisfactory, they should be treated by similar electrical methods. After influenza a course of general electrical treatment

promotes the insurance of the patient's health to a normal standard. The mental depression disappears and the bodily strength returns, and the period of convalescence, which is so often prolonged, is notably shortened.

I have seen a rapid disappearance of serious mental failure and unexpected improvement of health and debility in a Marwari gentleman, after influenza under general electrical treatment by the Electrical Bath. The gentleman, when he came to me, was anæmic, emaciated—reduced to skeleton, much prostrated, and there was serious mental failure. I treated him with Electrical bath; after 4 or 5 courses the improvement appeared,—appetite returned, felt stronger, gained in weight by 2 lbs. and the mental failure began to disappear. After a course of 10 he was so much improved that he could walk a mile or over with the help of a stick in hand. Having been unable to bear the expenses, he stopped the treatment and used to take medicine. After two months when he came to see me I was surprised to see the marked improvement of his health.

Neurasthenia:—In neurasthenic states the methods of general rhythmic stimulation are of value, especially the electric bath. Besides the galvanic, far-

adic, and sinusoidal currents, high frequency, static electricity and diathermic all have their uses. The cause of neurasthenia must also be attended to.

The original depressing cause of illness should be found out and, if possible, eliminated. If this cannot be done, no treatment will be of much use.

Rickets:—This is another condition of simple defect of nutrition which is benefited by general electrification. It is surprising to see how quickly children with rickets begin to improve in general health, in their powers of standing and walking and in weight, under the stimulating effect of electrical treatment. In Italy, Sagretti and Vederchi have reported a number of cases of rickets cured quickly and completely by electrical treatment administered by the bath method.

Several cases of rickets referred for treatment to the electrical department at St. Bartholomew's Hospital, and treated with electrical baths have fully borne out the accounts given by those writers.

Diabetes:—Much has been written on the treatment of this disease by high frequency methods and cures have been reported. In most of recorded cases in England a notable reduction in the daily excretion of sugar has been produced and the

patient's condition has been improved.

The sinusoidal current used in Schnee bath has been found to relieve symptoms, such as insomnia, eczema, and muscular weakness.

Obesity:—Many forms of electrical stimulation have been proposed for the treatment of this condition. A satisfactory and rational method has recently been proposed by Bergonie in which electricity is used to produce vigorous muscular action.

Gout:—The application of ionisation with salts of lithium to the treatment of Gout is worthy of note, as an early instance of ionic medication.

Edison caused patients to dip one hand into a solution of lithium chloride of the strength of 5 per cent., and the other hand in a solution of common salt. After the passage of a current from arm to arm in this way lithium can be detected in the urine and gouty symptoms were ameliorated after a prolonged course of these baths.

Ionisation with Salicylic ions is an excellent treatment for chronic gouty conditions and is the method to be preferred. Lithium ionisation can be applied simultaneously, as the Salicylic ion enters by the negative pole, while lithium enters by the positive.

High frequency applications have also been used for gout. In general the influence of high frequency applications upon chronic gout is a gradual one, needing a considerable number of applications. The condenser couch is the best mode of application, and the good result obtained appears to be a consequence of the general improvement of the patient's peripheral circulation and of his nutrition.

Rheumatic Affections:—In acute Rheumatism the employment of electricity is not usually required, as the medical treatment of Rheumatic fever is generally satisfactory. Nevertheless, observations have been made which seem to prove that ionic treatment of acute rheumatic joints will give prompt relief to the pain and swelling.

In the painful affections of joints and of fibrous tissues, which are so common as results of the rheumatic state, electricity is useful, both when used for its chemical effects (ionisation) and for its thermal (Diathermy and high frequency).

Excellent results are obtained in many chronic rheumatic conditions by ionization with salicytic ions. The term "Rheumatism" included many conditions which would now be regarded as cases of perineuritis, of

gonorrhœal or septic arthritis or various other morbid states.

Chronic Poly-Arthritis:—The statements made about rheumatic affections in the last section apply also to the conditions of chronic arthritis in its several forms. Gonorrhœal arthritis has been shown by Nagelschmidt to respond quickly to Diathermy treatment; and he has made experiments on animals which seem to show that the interior of a joint can safely be raised to a temperature sufficiently high to arrest the growth of the gonococcus, or even to destroy it *in situ*.

Dental sepsis is particularly common in rheumatoid arthritis. And before beginning electrical treatment the exciting cause must be found out.

Leukaemia:—In this disease X'Rays exercise a striking influence upon the cellular elements of the blood, reducing the numbers of leucocytes, and augmenting those of the red cells. I witnessed a case of leukaemia treated by Major Shorten, Radiologist, Medical College, Calcutta, and came to learn from him that the case was going to be cured after 10 exposures.

Tuberculous diseases:—The treatment of these affections by electricity has been extensively tried, and with fair success so far as the relief of certain of the

local manifestations of the disease are concerned.

In Pulmonary tuberculosis the recorded results are less satisfactory.

Diathermy can be used destructively in superficial manifestations of tuberculosis, and high frequency effluves have been recommended in Pulmonary tuberculosis by several writers.

In Lupus X'Rays have given ample proof of their power in promoting the healing of ulcerated surfaces, and on this account X'Rays are now frequently used in the treatment of this disease.

High frequency currents are also useful in Lupus, particularly for the treatment of the disease in the nose or in other parts which are difficult of access with X'Rays.

Tuberculous glands also respond favourably to X'Rays, when they are non-suppurating.

Carcinoma and Sarcoma:—Both X'Rays and radium have been used extensively in the treatment of malignant diseases of all kinds, but the usual failure of both of these agents to achieve a real cure of the disease had led to disappointment, in spite of the fully established fact that in them we have a palliative mode

of treatment which is of value in many cases.

X'Rays have a striking influence in promoting the healing of superficial cancerous ulcerations, and in causing the disappearance of the lymphoid nodules which are so commonly seen as the first signs of recurrence around the scar of an amputation of the breast.

Rodent ulcers:—The treatment of rodent ulcers by X'Rays has given many satisfactory cures.

Another electrical method of treating rodent ulcer is ionization with ions of Zinc. Zinc Ionization answers best in early cases, and least well in cases which have relapsed after other treatment, and in large ulcers of long standing.

Sterility:—Sinclair Tousey advocates the use of high frequency currents in cases where no cause can be discovered as being responsible for the sterile condition, and records successful results in some cases. He relies on the stimulating effect on uterine and ovarian functions and the general tonic action on the whole system.

A large glass vacuum electrode is introduced into the vagina, and a current of 150 miliamperes is given and repeated several times weekly. Electricity may be used for testing of nerves and muscles.

The following nervous diseases may be treated with electricity:—

Paralysis, Multiple neuritis, Alcoholic neuritis, Gouty neuritis. Rheumatic neuritis, neuritis from lead poisoning, Arsenical neuritis, Septic neuritis, neuritis from Syphilis, Neuritis after Diphtheria, Influenza, Beri Beri, etc., Perineuritis, Bronchial neuritis, Sciatica, Neuralgias, Myalgia. Myelitis-Locomotor Ataxia (by X'Rays), Progressive muscular atrophy, Less severe cases of Hemiplegia. Paralysis Agitans, Chorea, Spasm and Tremor; Writer's cramp. Insomnia, Hysteria.

Some diseases of circulatory, respiratory, digestive, urinary and reproductive organs, and affections of joints and fibrous tissues may be treated with various methods of electricity with success.

Otorrhœa was treated with good results by Dr. Lewis by ionisation with zinc.

Many cutaneous affections have been treated with Electricity in different methods by several observers with success. X'Rays are good in many cases of cutaneous affections.

I do not say that all the cases will be cured but it is sure that good many cases will do well, and many cases will be cured.

LACERATIONS OF CERVIX INVOLVING LOWER UTERINE SEG- MENT AND FORNIX, WITH ILLUSTRATIVE CASES.*

BY OBET AIM LENNIE, M.B.,
CH.B.

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The following cases are illustrative of an obstetrical complication, which is not uncommon, but is often apparently overlooked. In gynaecological practice one frequently finds evidence of old lacerations of the cervix, some of which may extend throughout its length, and occasionally an old cicatrix running into the fornix is met with. These injuries are almost invariably found on the left side. Enquiry into the obstetrical history of these patients reveals abnormal and difficult deliveries, with perhaps excessive hæmorrhage, and a protracted puerperium. The patients are often unaware of any injuries sustained, as they were not subjected to examination or treatment after the completion of labour.

In three of the four cases under consideration, the rupture of the lower uterine segment was incomplete, and took place between

the layers of the broad ligament. Two of these cases were further complicated by an extensive laceration of the vaginal vault. In the fourth case there was a bilateral laceration of the cervix of minor degree, complicated by a laceration of the vaginal vault, which injuries were, however, distinct from one another.

In each case rupture occurred on the left side of the uterus, and the fornix when involved was the left one. The almost invariable tendency for rupture to occur on the left side has been attributed to the obliquity of the uterus, and to the predominance of first vertex presentations.

In Case II, however, the pelvis was laterally flattened on the left side, and the presentation was a breech delivered to the aftercoming head, which was hydrocephalic. There was evidence that considerable traction had been applied to the limbs, as the right humerus was fractured. The rupture in this case, therefore, most probably originated from direct pressure on the thinned-out lower uterine segment, between the foetal head and the prominent lateral brim of the pelvis.

The patients were all multiparæ, and had had a series of pregnancies in rapid succession. Two of the cases were breech and two were vertex presentations, one

of the latter being delivered by forceps before arrival at the Hospital.

CASE I, aged 37 years, had had ten previous full-time normal births. The pelvis was moderately contracted, the conjugata vera being $3\frac{1}{2}$ inches; other diameters were apparently normal. She was a stout, flabby woman, and on admission was somewhat collapsed. She was sent in as an impacted breech. There was considerable œdema of the vulva. The patient rallied after restorative measures had been applied. On examination a very large macerated breech with extended legs was found to be presenting on the perineum. It completely occluded the vulva, and it was found impossible to pass the hand into the vaginal canal. The legs were delivered by means of a blunt hook applied to the groin; the body was much swollen, but was delivered by fair traction, and the arms, which were extended, were then brought down by the hook, the usual care being taken that the child's body would bear the brunt of the pressure from the instrument. The aftercoming head was perforated. A large amount of blood-clot immediately followed the extraction of the child. The placenta was easily expressed. Exploration and an intra-uterine douche were considered advisable, and,

on the hand being inserted, it passed into a cavity suggestive of a large, flabby uterus. The uterus, however, was found to be well retracted, and deviated towards the right side. The cervix was completely split on the left side, and the tear extended for about three inches into the lower uterine segment. In addition, there was an oblique tear running upwards and backwards from the internal os to the apex of the left posterior fornix. The rupture of the uterus was incomplete, and extended between the layers of the broad ligament. On exploring the cavity, bowel and omentum could be easily felt through the single layer of the broad ligament, and at first the peritoneal cavity appeared to be penetrated. There was no descent of bowel into the vagina, however. A corded structure suspended transversely across the cavity readily came down, and was found to be the round ligament. There was a large amount of blood-clot in the cavity, but no active hæmorrhage. Owing to the grave condition of the patient, it was considered inadvisable to attempt any stitching, and a laparotomy was out of the question. The blood-clot was cleared from the cavity, which was then packed with iodoform gauze. Saline transfusion, elevation of the bed, and further stimulation were resorted to. The child

weighed 11½ lbs., less brain tissue extracted after perforation.

Apparently the rupture in this case was spontaneous. The large size of the child prevented any manual vaginal manipulation, the blunt hook being merely directed by the fingers. From the consistence of the blood-clot, the hæmorrhage had occurred several hours previously, and there was no active hæmorrhage apparent.

The puerperium was uneventful for the first week, the highest temperature reached being 101 degrees. The pulse was never unduly rapid. The packing was removed in twenty-four hours without further hæmorrhage. On the fourth day the lochia was somewhat heavy. On the evening of seventh day the temperature rose to 103 degrees and the pulse to 130. Thereafter the chart was suggestive of a pelvic cellulitis. On the morning of the ninth day she passed a large quantity of pus while using a bed-pan. The temperature thereafter subsided to normal, but the pulse remained at 112. About this time the patient suffered from severe diarrhœa, which became intractable. During the next four days the temperature oscillated between 100 degrees and 102 degrees, and the pulse varied between 116 and 130. On the seventeenth day there were definite symptoms of general sepsis.

She died on the nineteenth morning after admission, the last temperature taken being subnormal and the pulse 80. A *post-mortem* was refused.

CASE II.—The second case was aged 34 years, gravida ix. The obstetrical history was good. She had had five normal births, but the previous one was a face presentation (still-born). There was some lateral contraction of the pelvis on the left side. The transverse at the outlet measured 3½ inches. The patient was admitted to Hospital in a collapsed state, with the child born to the after-coming head. The child had a spina bifida, and the right humerus was fractured. Apparently considerable traction had been applied. A hydrocephalic head was suspected as the cause of the impaction, owing to the presence of a spina bifida, and on perforating the head at the nape of the neck this suspicion was verified. On exploration similar injuries to those described in the first case were discovered, and the rupture was incomplete. There was no descent of bowel into the vagina. The laceration in the posterior fornix was stitched by interrupted catgut sutures from the apex downwards. Before suturing the cervix, the cavity in the broad ligament was packed with a narrow strip of iodoform gauze after the blood-clot had been cleared out. Suffi-

cient space was left to allow the withdrawal of the packing, and then the cervix was sutured with catgut. Half of the packing was removed in twenty-four hours, and the remainder twelve hours later. There was no recurrence of hæmorrhage. The puerperium ran a normal course, and she was dismissed well on the thirteenth day.

As an interesting sequel she is now attending the Dispensary, and is fully seven months pregnant. The cervix and fornix are soundly healed, the uterus is mobile, and there is no cicatricial deformity. The question arises as to future treatment. The obstetrical history is fairly good, and the patient should be able to deliver herself in the event of a vertex presentation. Atresia of the cervix and a weakened lower uterine segment may, however, have to be contended with. As the uterus is mobile, the old laceration of the fornix should not prove a disturbing factor. Provided that the relative size of the foetal head to the pelvis does not on this occasion indicate a Cæsa-rean section, a vertex presentation, or, if necessary, manipulative measures to secure such, should be all that is necessary for a favourable termination.

CASE III.—In the third case there was a similar incomplete rupture of the left lower uterine

segment and cervix, but the laceration commenced just inside the external os, and the vaginal vault was not involved. The pelvis was a rachitic flat, with a C.V. of 3½ inches. The patient had previously had one forceps delivery and two normal deliveries. The presentation was a fourth vertex. Owing to her collapsed condition, craniotomy was at once performed. The cavity between the layers of the broad ligament was full of old blood-clot, and active hæmorrhage was apparent. As the patient was *in extremis*, the blood-clot was removed, and the cavity packed with gauze. She died almost immediately.

This was probably also a case of spontaneous rupture commencing in a thinned-out lower uterine segment. Forceps may have been applied, as there was evidence of vaginal lacerations; but had the rupture been caused by an attempted forceps delivery, the cervix would most probably have been completely split to involve the vagina. She was sent in as urgent, suffering from hæmorrhage.

CASE IV.—The fourth case had no pelvic contraction, and the previous obstetrical history was excellent—four full-time normal births. The child was delivered at home by forceps, and weighed 12 lbs. Two hours after leaving, the doctor was recalled

urgently, and found the patient suffering from hæmorrhage. On vaginal examination he found a rupture of the left fornix, so packed the vagina, and sent her into hospital. On vaginal examination a laceration two inches long was found running transversely across the middle of the left posterior fornix. The cervix was pulled down, and was found to have an apparently old bilateral laceration, which had no communication with the tear in the fornix. There was no descent of bowel into the vagina. The vagina was merely swabbed with iodine, but was not repacked, as there was no recurrence of hæmorrhage. She was kept in the labour ward, however, for twenty-four hours, in case of such an emergency. The puerperium ran a satisfactory course; there was some abdominal distension, which was rectified by a turpentine enema and the administration of pituitrin. The temperature was very slightly raised for three days, and then subsided to normal. She was dismissed well on the fifteenth day. The laceration in the fornix had the regular edges of an incised wound, and must have been caused by the tip of the forceps blade during application.

In conclusion, the rupture in the first three cases was incomplete, and was dealt with *per*

vaginam. Certain obstetricians favour laparotomy, and probable hysterectomy, in cases of complete rupture and this seems the only feasible treatment. Others advocate laparotomy in all cases of rupture to determine the extent of the damage and to control hæmorrhage.

In the cases under consideration, laparotomy was out of the question, owing to the collapsed condition of these patients on admission to Hospital. The impressions first gained in exploring the cavity in the broad ligament are alarming. The hand can be passed to the elbow, and seems to be in the peritoneal cavity, as bowel and omentum are readily felt. On careful examination, however, a thin peritoneal layer is felt intervening. Should the rupture be complete, bowel would almost certainly prolapse into the vagina.

NOTES OF CASES.

I

A Case of Syphilis.

BY MISS N. B. O'BRIEN,
Sadar Hospital, Jalpaiguri.

I was called in to see L.D., a Hindu lady, aged about 27. I saw her lying down with the following conditions:—(1) Pregnancy of six months, (2) Syphilitic eruptions all over the body. These cutaneous rashes were of different types in different parts

of the body (polymorphine), (3) Iritis, (4) Ulceration in the lips, gums and tongue which extended upto the Tonsils, (5) Dysphagia, (6) Profuse Salivation, (7) Pain in the joints (there were no inflammation), (8) Bubo-Groin, (9) A small condylomatous growth in the vulva, (10) Ulceration in the inner aspect of labia majora extending through the vaginal canal to the cervix.

PREVIOUS HISTORY OBTAINED FROM THE PATIENT.

She acquired it from her husband about eight years ago. At first she had a chancre in the private part, and later on she had eruptions all over the body, which subsided after a few days without any treatment.

She conceived six times—this being the sixth one. The first child was born alive in the eighth month with eruptions on and died on the sixth day. After that she had three miscarriages (two in the sixth and one in the seventh month). The fifth child was born in the ninth month without any eruptions. But on the sixth day the eruptions appeared and the child died after six weeks' suffering.

PRESENT HISTORY.

This time the ulcerations in the private parts appeared at the beginning of pregnancy and the other symptoms followed. She

was treated by a Kaviraj, but with no effect. On the contrary she had ulcerations in the mouth with salivation. As her condition was getting from bad to worse, she stopped the Kaviraj's treatment and sent for me. I gave her some gargle in order to cure the mouth troubles without which no Hg. could be given by mouth. But it was of no use for about a week. A week after I was called in and asked by her people to give her some medicines immediately as she was not getting better. Finding no other alternative I injected Nov arsenobillon 0.45 (intravenously). I went to see her a week after, and found all the eruptions subsided. And all other symptoms were very much less than before. The mouth trouble was less and she could swallow her food. On the eighth day I gave her a second injection of the same strength. On the 16th day I saw her again, when all the symptoms were gone except the iritis and ulcer in the vagina, etc. The eye was treated in the routine method with yellow ointment, etc., and the vaginal canal was douched with Perchloride lotion. On the 24th day I saw her again when the eye trouble and the ulcerations of the private parts were all cured. I injected 0.6 of Nov-arsenobillon and then started Hg. by mouth. After eight days she

received the fourth injection of the same strength. And on the 42nd day she was given the fifth injection. The strength of the fifth one was 0.9. I did not inject the whole solution but threw away a quarter part of it. The Hg. treatment by mouth was continued up to the time of confinement. She delivered a full term child in the first week of December last. The child is quite fat and plump with no signs of congenital syphilis.

II

Surgical work of a Sub-Assistant Surgeon.*

(COMMUNICATED.)

The following major operations have been performed by a S.A.S. in London Mission Hospitals, at Jammalamadugu, Cuddapah District, and Chikballapur, Mysore State, in his 7½ years' service. He was guided and supervised in some of the operations by his superiors Doctors T. T. Thomson, M.B., CH. B., and A. J. Bennee, M.B., CH. R.:—

Excision of Retention Cysts	2
Excision of Lipoma	1
Excision of large simple Parotid Tumours	2
Excision of Sebaceous Cyst	1
Excision of Adenoma Breast	1

* Read by Mr. John Moses, L.M.P., at the Bangalore Conference of the All-India Sub-Assistant Surgeons' Association.

Excision of Fibro-Adenoma Breast	2
Excision of Epithelioma from Cheek	1
Excision of Left Lower Jaw for Epithelioma	1
Amputation of Breast for Scirrhus Cancer	1
Removal of Tubercular glands from Neck	8
Removal of Cancerous glands from Groin	1
Skin Grafting	8
Tonsillotomy	2
Amputation of limbs	9
Disarticulation at knee joint	1
Radical operation for Congenital Inguinal Hernia	1
Radical operation for Acquired Inguinal Hernia	7
First two or three were supervised by his superiors.	
Operation for Strangulated Inguinal Hernia	1
Patient died after three days by hæmorrhage per rectum.	
Gastro-jejunosomy (Posterior) for Pyloric Obstruction	5
Fourth case was supervised by Dr. T. T. Thomson.	
Suprapubic Lithotomy for Vesical Calculus	5
Perineal Litholapaxy	2
First Case.—The stone was crushed by him partially in first sitting but Dr. Thomson completed in second sitting.	

Second Case.—Died after two days. On P. M. examination, the bladder was found to be ruptured

ed and the urine had escaped into the peritoneal cavity. The operator never had caught the bladder wall during operation. Dr. Thomson's explanation for this was as follows:—There must have already been ulceration in the bladder wall and by the movements of Lithotrite further injury to that area and thus perforation, peritonitis and death have been occasioned.

Partial extirpation of penis for cancer 1 |

Complete extirpation of penis for cancer 2 |

Cock's operation for obstinate urethral stricture 3 |

One of these died as there occurred extravasation of urine before the operation.

Excision of lower portion of scrotum for Tubercular nodules 1 |

Radical for Hydrocele 2 |

Radical for Varicocele 1 |

Radical for Internal Hæmorrhoids 3 |

Radical for Fistula in ano 3 |

Curettage for sterility 2 |

Making an outlet in Atresia Vagina 1 |

Anterior Colporrhaphy and Ventrofixation 4 |

Anterior and Posterior Colporrhaphy and Ventrofixation 1 |

Dr. Thomson guided and supervised.

Ovariectomy for large Ovarian Cysts 3 |

Ovariectomy for Cystic Ovary 1 |

Second case was supervised by Dr. Thomson.

Forceps applied in delayed Labour 8 |

Forceps applied in Eclampsia cases 3 |

Craniotomy 1 |

Cæsarean section 1 |

Patient died after 24 hours.

Eye operations—

Cataract extraction-Capsulotomy method 10 |

Cataract expression Smith's method 41 |

Needling for retained capsule 3 |

Iridectomy 14 |

Trephining 5 |

Evisceration 6 |

Enucleation 15 |

Pterygium 5 |

Operation for Entropion 2 |

Operation for Ectropion 2 |

Tattooing for corneal opacity 8 |

Dr. Bennee and Dr. Thomson guided and supervised in some of these eye operations.

The following have been done in a village branch Hospital—

Radical for Hydrocele 1 |

Radical for Varicocele 1 |

Cock's for Urethral Stricture 1 |

Excision of breast for fungated Scirrhus Cancer 1 |

Operation for Strangulated Inguinal Hernia 1 |

All this work is due to the great kindness of Doctors T. V. Campbell, T. T. Thomson, A. J. Bennee and the Mission which he belongs to

MEDICAL ITEMS OF INTEREST.

The Modern Treatment of Diabetes.—

A. Garrod, W. Willcox, W. L. Brown, E. I. Spriggs, E. P. Poulton, G. Graham, P. J. Cammidge and F. J. Poynton (*The Lancet*, Nov. 5, 1921).

This discussion, held on October 24th, at a meeting of the Medical Society of London, recognizes the pancreas definitely as the center of diabetic disturbance in the organism but also recognizes the condition as a systemic one, to be dealt with on general as well as special principles.

Sir Archibald Garrod described the modern treatment of diabetes as based on the fact Allen had brought out clearly, that a diabetic patient did best when somewhat underfed and that restriction of protein and fat was no less important than restriction of carbohydrates.

Leyton divided patients for treatment into a group past forty years of age in whom, after years of overwork, the pancreas began to degenerate; a second group, in whom diabetes developed somewhat rapidly and sometimes with acute indications of toxemia; and a third group, in whom the pancreas had so deteriorated that no satisfactory diet could be found. The ideal diet he described as one in which sufficient energy was supplied in the food, while the sugar in the blood did not rise above 0.12 per cent., and no excess of any acid or acetone appeared in the urine. In severe cases this ideal diet could rarely be attained.

Dr. W. Langdon Brown expressed the view, after experience of both Allen's and Graham's methods of treatment by alimentary rest, that although Allen's plan might rid the urine of sugar more quickly, it was more trying to the patient than Graham's and the ultimate results of the latter appeared to him as good.

Spriggs emphasized the importance of educating the patient to co-operate with the doctor in his treatment; and offered a recipe for home-made diabetic bread wholly free from starch and sugar and containing but a minute quantity of fat, while more palatable than those on the market.

Cammidge laid stress on the fact that fasting treatment gives physiological rest to other organs beside the pancreas. He also distinguished three types of diabetics, recognized by their "different value," "the difference between the percentage of sugar and the percentage of total carbohydrates in a series of samples of blood taken before and after a test breakfast of known composition." Out of 140 cases so tested, 45 gave "pancreatic" curves, 48 a type called the "hepatic" curve because it can be reproduced in animals by interference with the functions of the liver and 34 a "concurrent" form of curve. It is in the pancreatic type that methods of treatment based upon fasting meet their greatest success, probably by securing extensive physiological rest. Under fasting the hepatic type is apt to develop serious acidosis and these patients are peculiarly sensitive to fats and protein, while showing better toleration for carbohydrates and dextrinized starch: they derive benefit from the Von Noorden oatmeal cure.

Poynton felt that we must look further than elaborate dieting for a real cure of diabetes.

Itching in Syphilis.

WALTER J. HUGHMAN (*Archives of Dermatology and Syphilology*, January 1922) calls attention to the diagnostic danger of unreservedly accepting the statement that itching lesions are non-syphilitic. He states that, in searching the literature on the subject, nothing was found beyond the conventionally known facts that the small papular secondary syphiloderm or syphilitic lichen and its derivatives, such as syphilitic acne, may itch, particularly so in the Negro, and that syphilides are more likely to be pruriginous in blacks than in whites. One author, however, in discussing pruritus in syphilis, states that itching is particularly apt to occur on the scalp, scrotum, perineum and legs and that very rarely a syphilide may be intensely pruritic. In the instances reported by the author he calls attention to the marked pruritus and the resemblance of one eruption to a generalized, exfoliative dermatitis. Hebra has also noted a case of syphilis resembling an exfoliative dermatitis. The itching stopped in each case a few hours after the first injection of mercury.

A Surgeon invents the first Electric Telegraph.

It is not known generally, writes Dr. Charles R. Gibson, F.R.S.E., in the *Glasgow Medical Journal*, that it was a surgeon who invented the first electric telegraph, and that this was fifty years before the discovery of the electric current. This invention of Dr. Charles Morrison, of Greenock, is dated 1753, and it is of special interest to note that 150 years before this date, it was a physician who laid the foundation of our electrical knowledge. For 2,000 years amber had got credit for possessing a peculiar attractive property when rubbed, a phenomenon easily explained by the ancients by supposing that amber possessed a soul and that rubbing gave it heat and life. But Dr. William Gilbert who was one of Queen Elizabeth's physicians, shed new light upon the subject about the year 1600. Gilbert discovered that amber was not the sole possessor of this attractive property, for when he rubbed pieces of sulphur, glass and resin, they all behaved in the same manner as amber had done for twenty centuries. Although amber was no longer looked upon as the sole possessor, Gilbert memorialised the amber in our word "electricity," which he derived from the Greek word for amber (*electron*). This was the beginning of our knowledge of electricity, and it is of interest that the first pioneer was a physician.

While Morrison's claim upon our attention is of much less importance than Gilbert's, it is of special interest to find a definite attempt to use electricity as a means of rapid communication before electricity had been tamed by Volta.

It may be remarked, in passing, that here, again, the medical profession played an important part, for it is one of the best known facts in the history of electricity, that Volta was led to the discovery of the electric current through Galvani's declaration of animal electricity, suggested by the twitching of the limbs of a freshly-killed frog, when in the neighbourhood of an electrical discharge. Luigi Galvani was an Italian Physician, and Professor of Anatomy in the University of Bologna.

Again the first electro-magnetic discovery, which laid the foundation of electrical engineering, and almost all the practical applications of electricity, was made by one whose profession was originally medicine, although he had

turned over to Physics at the age of twenty-nine. Hans Christian Oersted chose medicine as his profession but in 1806, he accepted the Chair of Physics in the University of Copenhagen and it was in 1819 that he made his far reaching discovery that an electric current caused a poised magnetic needle to move and to take up a position at right angles to the electrical conductor.

Bone Lesions in Beri-Beri.

P. G. SHIPLEY, E. V. MCCOLLUM AND N. SIMMONDS (*Journal of Biological Chemistry*, December, 1921) have described the changes in the bones of rats fed on diets so constituted as to cause uncomplicated beri-beri or polyneuritis. These authors have been surprised to find in rats suffering from polyneuritis induced by diets deficient in the water soluble vitamin B that the histological appearances of the bone are exactly identical with those found in guinea-pigs suffering from uncomplicated scurvy. The rats have been fed on a diet of purified food substances lacking only in the antineuritic water soluble vitamin. It consisted of casein, butter fat, dextrin, agar and inorganic salts. The rats gained in weight for three weeks, after which they began to decline. At autopsy (forty to sixty days) the body tissues have been found atrophic, but there has been no deformity of the skeleton and no noticeable enlargement of the extremities of the bones. The picture of the bones seen through the microscope has been indistinguishable from that seen in the bones of guinea-pigs affected with scurvy. The bones are shallow and stain intensely with basic dyes. The cells in the narrow proliferative zone are flattened in the direction of the long axis of the bones. All signs of growth have disappeared. The blood vessels of the marrow are crowded with red blood corpuscles. In many places the vessels have ruptured and numerous small and large hæmorrhages abound. When rats have been fed on the diet producing scurvy and similar bone lesions in guinea-pigs, the rats make normal growth. These results leave no room for doubt that the rat can dispense with the water soluble antiscorbutic vitamin.

Vitamins for Chickens.

R. H. A. PLUMMER, J. L. ROSEDALE, A. CRICHTON AND R. B. TOPPING (*Biochemical Journal*, December, 1921) have succeeded in rearing young

chickens in confinement under laboratory conditions. There is a wide-spread belief among raisers of poultry that young chickens cannot be reared under the artificial conditions of housing and diet which many laboratory animals tolerate without detriment. Current ideas may be expressed in the statement that birds must be kept on the ground, that they must have exercise, outdoor life and green food. In these experiments the chickens were supplied with the usual protein, carbo-hydrates and fats. No salts were added to the food. Accessory food substances were given in the form of cod liver oil for vitamin A, yeast or "Marmite" for vitamin B and lemon or orange juice for vitamin C. The diet was made up of oatmeal and milk and no allowance was made for vitamins in these foods. Water was freely provided. With the food supplied, twenty-one out of twenty-four chickens were reared to maturity, two died from lack of vitamin B and one was killed accidentally. In a later test nine birds were brought to maturity. The experiments were conducted in periods, changes being made from time to time. The result show that chickens are susceptible to an insufficiency of vitamin B in the diet. The amount of vitamin B required seems to run parallel to the quantity of carbo-hydrate and fat in the diet. It may be represented as one gramme of "Marmite" per sixty grammes of oatmeal and per ten cubic centimetres of cod liver oil daily. This amount serves for twenty-two birds. For the same number of birds ten cubic centimetres of cod liver oil and sixty cubic centimetres of lemon juice daily are sufficient. The chickens were fed from the third day after hatching. The authors believe that weakness of the legs in chickens is due to insufficiency of vitamin B in their diet.

The Treatment of the Vomiting of Pregnancy by Injections of Corpus Luteum Extract.

In the *Journal of the American Medical Association* for February 26, 1916, are given twenty-five cases of the vomiting of pregnancy treated by intramuscular injections of corpus luteum extract with twenty-one recoveries. In the *American Journal of Obstetrics* for March, 1919, Hirst reported one hundred eleven cases with sixty-five complete recoveries, thirty-four with marked improvement, eight failures and four with exacerbation of the con-

ditions. These four were goitre cases and Hirst infers that thyroid dysphasias contra-indicate the use of corpus luteum preparations. In the *Journal of the American Medical Association* for March 19, 1921, Hirst advises the intravenous injection of corpus luteum extract because larger doses can be given with quicker and more reliable results since they have succeeded when intramuscular injections have failed. Ambulant cases are given for centigrams of extract of corpus luteum dissolved in two c. c. of physiological salt solution every other day. In moderately severe cases and those unable to walk, the two c. c. were given every day. In very severe cases, which were kept in bed, the injections were given twice a day. At least twelve c. c. in all should be given to prevent a recurrence which is hard to overcome. One anaphylactic reaction occurred in a highly nervous case and in a second case an abortion followed the injection in twenty-four hours. These two cases were the only ones giving bad results. Goitre cases should not be given corpus luteum preparations. The intramuscular injections were given deep into the thickness of the muscle, preferably the deltoid, and straight down, with no slant to the needle. Two centigrams of extract of corpus luteum dissolved in one c. c. of physiological salt solution saturated with chloretone were given every other day in mild cases with one or two attacks of vomiting in the morning. As a rule, five or six injections sufficed to stop the nausea and vomiting. In cases of vomiting at any time, and with persistent nausea, the injections should be given daily for twelve or fifteen days. In uncontrollable vomiting, the patient should be kept in bed and one c. c. given twice a day. In several hundred injections, Hirst has not seen any abscess formation but there has been some irritation and redness with swelling which promptly yields to applications of equal parts of alcohol and water. In the *American Journal of Obstetrics* for August, 1919, Quigley reports seventeen cases with twelve recoveries, four temporarily improved and one failure. In the *Therapeutic Gazette* for May, 1920, Claggett reports remarkable results from injections of corpus luteum extract given once or twice a day. Improvement usually began in a few days but permanent results generally required from 6 to 14 injections, the last ones being given at three day intervals.

OUR GRIEVANCES.

IN THE U. P.

Copy of G.O. No. 228/V-83, dated the 23rd February, 1922, Medical Department, from the Secretary to the Govt., United Provinces, to the Inspector-General of Civil Hospitals, United Provinces, Lucknow.

With reference to recommendation C-4 of the Medical Advisory Committee report I am directed to say that Government consider that it would be absurd to make it obligatory to employ L.M.P.s. as examiners or lecturers, but that there can be no objection to the employment of any sufficiently well qualified L.M.P. as an examiner or lecturer.

Copy of G.O. No. 299/V-74, dated the 6th March, 1922, Medl. Department, to the Inspector-General of the Civil Hospitals, United Provinces.

I am directed to forward a copy of the recommendation No. B-7 of the Medical Advisory Committee, regarding the acceleration of the normal promotion of S.A.S. and to say the Hon'ble Minister endorses the Committee's recommendation.

Copy of a recommendation No. B-7 of the Medical Advisory Committee.

AGENDA.

B-7.—The deputation to the Inspector-General of Civil Hospitals in March 1920: demanded accelerated promotion inside the S. A. Surgeons grade or those who distinguished themselves in any branch of the professional work or in the prevention of epidemics or in the performance of military duty or general proficiency. This demand was not repeated.

The Committee do not recommend the acceleration of normal promotion, good work can sufficiently be rewarded in other ways.

Copy of G.O. No. 328/V-79, dated the 16th March, 1922,

Medical Department, to the Inspector-General of Civil Hospitals, United Provinces.

With reference to correspondences ending with your letter No. 2403, dated the 1st March 1922, regarding extensions of service of certain S. A. Surgeons, who are due to retire soon, I am directed to say Government refuses to sanction extensions of service to any of the S. A. Surgeons in question and to request that the S. A. S., Association may be informed accordingly.

Copy of G.O. No. 447/V-10, dated the 13th April, 1922, Medical Department, to the Inspector-General of Civil Hospitals, United Provinces.

With reference to recommendation C-3 of the Medical Advisory Committee's report, I am directed to say that Government cannot accept the demand that the education in Medical Schools all over India should be uniform, so that a student, who passed from a school in one province could as matter of right be accepted for service in another province.

The following are extracts from the Presidential address delivered by Mr. Bankey Lal, Senior Grade Sub-Assistant Surgeon in Sub-medical charge of Colvin Hospital, Allahabad, at the Sixth United Provinces Provincial Conference of the A.-I. S.-A.Ss.' Association, held at Cawnpore:—

The first question you have touched is the question of Education. Sound education is the only instrument which can enable one to be capable of discharging the duties of a citizen. Half-education is always dangerous and medical education specially, should, therefore, in no case be allowed to be imparted by halves and one-fourths. It is painful to find that medical education in India is imparted to produce Assistant and Sub-Assistant Surgeons and the Medical profession is unfortunately a divided profession in India. Caste system in the Medical profession

is a mistake: It destroys the unity of the Profession. In Europe there is no distinction between medical practitioners; and the students there are not required to be members of a certain class of service but students of medicine and surgery. There seems no reason that you should be discouraged. Now you have got your own Council, your own Ministers and the Medical Department, a transferred subject. I am quite confident that if you are reasonable you will have your supporters and your voice heard. I realise the force of your arguments and I am, therefore, quite sure that the time is not far, when your institutions will be run and conducted on the lines of the West.

To your remarks regarding the general literary qualification I am rather surprised to find that a Matric of 50 or 40 years back could thoroughly understand and digest the medical science in colleges but now he has lost that capacity. Is the standard of education deteriorating with the change of time?

Another point about education that you have touched is of creation of 5 years' course in medical schools and I entirely agree with it, you should therefore move your Provincial Medical Councils to have their recommendations carried out. To me it appears that there is no General Medical Council in India, there is, therefore, no medical body to force its opinion on the Executive Government and we should therefore try to have a General Medical Council in India on the lines of the British Medical Council. I believe that our Ministers and Councillors would see that Medical institutions in India are run on the lines of the Medical institutions in the West so that the students of medicine in India may have the same facility as enjoyed by the students of the West.

The demand of increase in pay is quite reasonable. I believe it is under the consideration of our benign Government. You have a most sympathetic and generous Governor in your Province and through his magnitude of mind you may very shortly be informed about the increment in your pay.

The Provincial Secretary in his report for the past year has drawn out a picture of the bond in which Sub Assistant Surgeons have to enter with the Government at the time of their entering in the Agra Medical School. The bond in question is so inequitable that it

can not be defended on any principle whatsoever. It is such as can not be found anywhere else in the civilised world. Just consider that it is entered into at the time when the executant is generally hardly out of his teens and cannot be supposed to understand the significance of it and if the legality of the bond were to be challenged in a Court of Law, there cannot be any doubt as to the issue. The bond is not only illegal but also immoral and inequitable.

You would, perhaps, gentlemen, like to know what it is that the Government itself undertakes on its side. It gives pittance of Rs. 6 or 8 per mensem which is euphemistically called a scholarship and it is in return for this paltry sum that it exacts a penalty of Rs. 1000 and the bond slavery of 10 years. It is, as it were, in return for a mere mess of pottage that we are made to barter away our freedom. I ask you again, gentlemen, if, it is equitable, and is there any justification for the Government, giving this paltry scholarship? It is really Government taking advantage of the economic position of the country and it is really under that pressure that the guardians of the students, without themselves understanding it, sign away the future freedom of their children and you will see how inequitable the advantage is when you consider what really the scholarship of Rs. 6 or 8 per mensem means in the economic world of to-day I request the Government to kindly do away with scholarship.

IN THE PUNJAB.

The Civil Sub-Assistant Surgeons of the Punjab, have, we understand, submitted the following Memorial to the Hon'ble Khan Bahadur Mian Fazl-i-Hussain, M.A., Bar-at-Law, Minister of Education, Punjab Government:—

MOST RESPECTFULLY SHEWETH:—

1 That your humble petitioner submitted a memorial to the Inspector General of Civil Hospitals, The Punjab in June 1920, and a deputation of the Punjab Branch of the All India Sub-Assistant Surgeons' Association had the honour of waiting on him on

6th May 1921, in order to bring to the notice of the Punjab Government the serious grievances of the service to which the petitioner belongs. The submissions made to the Government in this connection for the improvement in the status, pay and prospects of the Sub-Assistant Surgeons have, your petitioner ventures to think, not received that generous acceptance by the Government which in your petitioner's humble opinion, justice to one of the most deserving, long suffering and efficient services required. Your petitioner, therefore, begs humbly to approach you with a brief statement of what he and his brother members of the service regard as the appropriate directions in which the conditions of the service require immediate improvement.

2. Your humble petitioner begs to urge with the greatest respect that the revised scale of pay sanctioned for the services is utterly inadequate. The enormous rise in the prices of the necessities of life, of wages of labour and of domestic servants, in rents of houses and in the cost of providing education to children, not to speak of the rise in the standard of living, are matters too well known to be dilated on in this memorial. These facts have been recognised and accepted by Government, though in the opinion of your humble petitioner, due weight has not been attached to them while revising the scale of his pay.

In addition to the above, your humble petitioner begs to urge the following considerations in this behalf:—

(a) The grave responsibilities and risks of the service;

(b) the preliminary academic qualification and high professional training, which is now equivalent to the old L. M. S. standard, that a Sub-Assistant Surgeon has to acquire;

(c) the dwindling of private practice owing to the phenomenal growth of private practitioners and frequent transfers after short intervals of members of the service from one place to another;

(d) the snatching away of the more important and attractive appointments from the Sub-Assistant Surgeons to be given over to Assistant Surgeons, involving a great financial loss to the former; and

(e) the peculiar expenses incidental to the petitioner's profession viz., large expenditure on books and periodicals, and the expenses due to maintaining a hygienic and sanitary mode of living.

3. Your humble petitioner has reasons to believe that the Government is fully cognisant of the fact that the Sub-Assistant Surgeons were in the past underpaid, considering the professional knowledge that was required of them and which they possessed; and that the recent increase in their scale of pay was much less than what the Inspector-General of Civil Hospitals proposed.

4. The absolute inadequacy of your humble petitioner's pay is made all the more intolerable by comparison with the salaries of other subordinate services in whose case the increments have been fairly handsome. Your petitioner begs to give below a few figures in support of the above submission:—

Service,	Preliminary education.	Professional training.	Pay.
Jailors	Matric	Nil	150 400
Excise Inspectors	do.	Nil	180 300
Agricultural Assistant*	do.	2 years	70 180 B 100 350 A
Subordinate Engineering Service	do.	2 years	80 255
Forest Rangers	do.	2 years	80 250
Sub-Assistant Surgeons	do.	4 years	70 175

* 20 % in grade B are eligible for promotion to grade A.

5. Even in the Medical Department, to which your petitioner has the honour to belong, the treatment meted out to the Assistant Surgeons, in the matter of increase in pay is fairly liberal, while a Military Assistant Surgeon, with practically the same qualifications as your petitioner (i.e., Matric and 4 years' professional training), starts on Rs. 200 and can rise up to Rs. 1,000; and a Civil Assistant Surgeon, whose professional education and training exceeds that of the members of your petitioner's service by only one year, is given a start of Rs. 225 and can rise up to Rs. 1000.

6. Having regard to the facts enumerated above, your humble petitioner begs leave to suggest that members of his service be allowed a revised scale of pay starting from Rs. 150 per mensem and rising to Rs. 350 per mensem by annual increments of Rs. 10 as proposed by the deputation that waited upon the Inspector-General of Civil Hospitals, Punjab, on 6th May 1921.

7. Next in point of importance is the question of promotion to higher services. In regard to this matter also, your humble petitioner feels that his service has not received just and generous consideration from the Government. Though the members of all other services have fairly large prospects of rising to the highest posts in their several departments, a Sub-Assistant Surgeon is to all intents and purposes perpetually doomed to remain a Sub-Assistant Surgeon. The Government of India letter No. 1046, dated the 23rd October 1914, permitting the making available of posts of Assistant Surgeons to Sub-Assistant Surgeons has practically remained a dead letter in this province, and during the 8 years that have elapsed since that letter was issued only two members of our service have been given the advantage of it.

In this connection, your humble petitioner cannot but take the liberty of citing the following words of a former Lieutenant-Governor of the Province:—

"That such skilful operators (referring to a Sub-Assistant Surgeon) should be condemned by our system never to be able to rise above the post of Sub-Assistant Surgeons without going through a college course is in the Lieutenant-Governor's opinion a serious blot on our medical organisation."

Going through a College course is not the only objection to the present state of things. Another and a graver objection is the inadequacy of the number

of posts of Assistant Surgeons in theory made available to Sub-Assistant Surgeons. While the number of Sub-Assistant Surgeons in the Province is no less than 600 and that of Assistant Surgeons only 100, only a maximum of 6 posts of Assistant Surgeons have been thrown open to the former, though they can count among them some of the most capable physicians and skilful surgeons. But the manner in which this just, though extremely meagre, concession to the legitimate aspiration of our service has been worked out in practice is clear from the fact that not even that small limit (*viz.*, six) has so far been reached.

In this connection, your humble petitioner makes bold to humbly offer the following suggestions:—

(a) That the number of posts in the cadre of Civil Assistant Surgeons reserved for Sub-Assistant Surgeons be increased to one third of the strength of that service, so as to admit of a sufficient number of Sub-Assistant Surgeons deriving advantage thereof.

(b) That there should be no College test, there being none in other provinces and none being required in view of the large experience and professional knowledge of the Sub-Assistant Surgeons concerned. Moreover there is no test for Military Sub-Assistant Surgeons at the time of their promotion to the ranks of Lieutenant and Captain sanctioned in Army instruction, India, No. 2, dated 3rd January, 1922, nor there is any test for Assistant Surgeons on their promotion to the grade of Civil Surgeon.

(c) That Sub-Assistant Surgeons who have put in 10 years' service, be eligible for promotion to the rank of Civil Assistant Surgeon in recognition of their services, without having to undergo any further test.

(d) That any Sub-Assistant Surgeon of 5 years' standing be permitted to appear in the M.B., B.S. examination after taking a course in the Medical College in Practical Pathology and Physiology.

8. Your petitioner also begs leave to point out that the representation on the Medical Council accorded to Sub-Assistant Surgeons, who form the bulwark of the Medical Department, is highly inadequate even as compared with similar representation in other provinces. The claims of petitioners' service should be adequately recognised in the matter of its representation on the Punjab Medical Council.

9. Your petitioner has been pained to find that while the Punjab State Medical Faculty has been created solely for the benefit and training of Sub-Assistant Surgeons, his service has been denied any representation on its governing body. Nor has his service been given any representation on the Punjab State Board of Public Health. He, therefore, humbly requests that his service should not be totally ignored as a negligible quantity, and be accorded an adequate representation on these bodies commensurate with the importance and strength of his service.

Your petitioner will, as in duty bound, ever pray for your long life and prosperity.

IN C. P.

The following Memorial has been submitted to the Hon'ble the Minister in charge of Medical Department, C.P., by the Sub-Assistant Surgeons of the Province:—

MOST RESPECTFULLY SHEWETH,

That, while the class of Sub-Assst. Surgeons, of which your humble memorialist has the honour to be a member, is regarded as the back-bone of entire medical administration of the country, it is labouring under so many disadvantages and is subjected to so much sufferings that the position of the members of that class in service has become exceedingly unpleasant. The usefulness of the class is a well-established fact and the creditable work done by its members has been acknowledged by not only the D. G. I. M. S., Surgeons General, Inspectors General of Civil Hospitals, members of the I. M. S. but even the Viceroy himself, in no mean and uncertain terms. In spite of all these the attention paid towards the well being of the class has ever been so niggardly that the grievances to-day have assumed very enormous extensions. Without being tardy or elaborately lengthy your memorialist will point out, sir, that the class of Sub-Assst. Surgeons is suffering from a number of grievances, and their immediate needs may be summarised as follows:—

1. The scale of pay sanctioned for the Sub-Assst. Surgeons is from Rs. 60 to Rs. 150 though this maximum even is

not attainable by all. The cost of living in these days has gone up so enormously (and is daily going up) that it has become practically impossible for him to lead even a most ordinary mode of living. The Central Provinces are notorious for their dearth and this was the reason why the scale of pay for Sub-Assst. Surgeons in these provinces was kept always higher than in other provinces. Simultaneously with the general enhancement of cost of living all over the country, provinces like Madras, Bengal and Assam have increased the scale of pay for Sub-Assst. Surgeons to one which though not satisfactory is little better than the scale of pay in these provinces. The cost of living in these provinces, still continues to be higher as compared to that in those provinces and there seems to be no justifiable reason as to why the pay of Sub-Assst. Surgeons here should not be raised. Regarding the condition of provincial finance it would not be out of place to mention that Bengal, where the scale of pay has been recently revised, commenced the working of reforms with a very big financial deficit. It is the Sub-Assst. Surgeon who does the real and the material good to the suffering masses, it is he who is found with his mission of relief at the cottage door of an out-lying place in the interior and there is no reason why his genuine labour should not be properly remunerated. The bulk of the provincial revenue is being utilised in increasing the salaries of those already highly paid officials who live in urban areas and as such are of no practical benefit to the masses who live in the far interior. Your humble memorialist therefore most respectfully prays that the scale of pay for Sub-Assst. Surgeons in these provinces be raised to from Rs. 100 to Rs. 350 per mensem.

2. The house-rent given to the Sub-Assst. Surgeons is a ridiculously small sum of Rs. 10. This sum is quite inadequate. It is not possible to get in this sum a house worth living. Your humble memorialist therefore requests you to grant a house-rent of at least Rs. 20 in places like Nagpur, Jabulpur, Akola, Amraoti and Raipur and Rs. 15 in other places.

3. The position of Sub-Assst. Surgeons in jails is very humiliating. He is supposed to be working under the jailor whose qualifications in many cases are far inferior to those of his. This is very

degrading to his rank and profession and therefore your memorialist requests you to make him subordinate to Superintendent alone. Another grievance in connection with jail is about the tenure of service which should not exceed 2 years at the most.

4. A Sub-Asst. Surgeon on epidemic duty has to undergo many risks and it is but fair that his risks be properly remunerated. The present rate of allowance is not satisfactory and it should be increased to at least Rs. 2 per day.

5. The teaching allowance given to the Sub-Asst. Surgeons appointed as demonstrators at the medical school ranges from Rs. 25 to 40. Taking into consideration the time and energy they have to devote for the purpose this is very inadequate and it should be increased to at least Rs. 50.

6. The present dispensary allowance of Rs. 10 is very unsatisfactory. As the miscellaneous work attended to by a Sub-Asst. Surgeon in a dispensary has increased, this allowance should be revised and increased to Rs. 20.

7. There are absolutely no facilities for capable and ambitious members of the service for developing their professional knowledge further. This is very detrimental to the professional enthusiasm of the whole class and it is therefore very necessary that some seats for suitable and willing Sub-Asst. Surgeons be reserved in medical colleges every year.

Lastly, your humble memorialist most respectfully begs to solicit that in view of the present hard times through which Sub-Asst. Surgeons have to pass and in view of the fact that their education both preliminary and scientific has been raised as well as the fact that they have very onerous and responsible duties to perform, you will graciously be pleased to sanction the increase of pay, etc., prayed for.

For this act of kindness your humble memorialist shall ever pray.

CORRESPONDENCE.

The Crisis.

SIR,—I here are certain salient and pregnant observations in the Editorial of the April issue of

the *Indian Medical Journal* which requires more than passing notice. "Our old venerable Secretary presented the annual report as usual but to us who are familiar with him and his views we find that in the report there is a note more of mingled feelings of despair than any rays of hope". And why? "It has been our experience that all the Presidents of our Conferences give us fresh hopes and encouragement while as a matter of fact they are far from being realised". "It is perhaps the irony of fate that we should be praised beyond measure but not derive material benefits in the matter of pay and prospects" and, I would add, status too in our profession. In spite of a powerful agitation and frequent representation to the powers-that-be, one is really surprised to see that in most essential respects we are where we were. We asked for more pay. It has been warmly accepted, but tardily effected and scantily increased.

Government has been, and I believe still is, under the impression that some words of praise are enough to soothe the crying child. They have all along consistently praised us but paid us little. One of the highest authorities had told us, a year before, that "the pay of the Sub-Assistant Surgeons had been increased by 300 per cent, comparable only

to the I.M.S. Officers". The fallacy of this statement may be due to the heat of rhetoric.

Pay apart, on which I do not lay much stress, what have the authorities done with regard to other demands which are necessary and vital to the free and expansive evolution of our class? Save for the lugubrious title of L.M.P., in what way have we been benefited by them? The demand of five years' training is still "under the consideration of the Government of India". The request for admission into the Medical Colleges of India has been admitted but the fulfilment has been evaded by reference to the Universities.

It is because of this condition of things, that I call this a period of crisis to our class. It is, therefore, a period in which if we do not organise ourselves more thoroughly than we are at present, it requires no prophet to foretell that our class is doomed to stagnation and ultimate decay and will no more represent or embody the vital and noble inspirations of the medical profession. Our plans of future evolution should be constructive in its aim, as well as agitative in character. While the one will attract the eye of the country and find room for those ardent youths who desire medical education but who do not want to be bound down by any bonds of

indenture or enervated by the narrow vision and ideals of a Government institution, the other will hasten, because of the existence of a parallel constructive scheme, in a way which we cannot at present conceive, the progress of such reforms of our redress which we are now so ineffectually claiming with our loud mouths alone.

The All-India S.-A. S.s' Association should constitute itself as a "General Medical Council for India" and an executive should be evolved out of it to introduce a scheme of medical education for the country. The members of this Council need not necessarily be S.-A. Surgeons alone but all medical men with recognised diplomas and degrees, foreign or indigenous, who can subscribe to the following: (1) The necessity for a General Medical Council for India, (2) The wisdom of doing away with the "caste system" in our profession which is doing so much havoc to the progress of a certain class, called the Sub-Assistant Surgeons and to a large number of Assistant Surgeons: that is to say, an imperative necessity for a just and reasonable unification of the medical profession in this country, (3) To promote the establishment of Colleges and courses along the lines prevalent in Great Britain, America, Germany and other civilized coun-

tries, (4) To respect its diplomas and recognise its authority to settle the details of medical education and of questions of medical ethics, (5) The organisation of the science of healing for the benefit of humanity on strictly scientific lines without pandering to superstition or to unexperimented beliefs. This Council is in no way contemplated to be an antagonist to the British Medical Council.

There has been, as far as I know, a keen desire among the medical men of this country, both among the Sub-Assistant Surgeons and Assistant Surgeons, for the establishment of a Medical Council for India. I am sure that all the Assistant Surgeons whose grievances are also akin to ours and whose sufferings differ only in degree, will try their best to fructify this idea of a Medical Council. The Medical Profession in India is not at all lacking in great men. I appeal to them to take up this task, to evolve the future of medical profession in India. Never before was there such an opportune time as this. The times are indeed favourable: the spirit of the nation is for it: the needs and circumstances of the medical profession in this country demand it as an imperative necessity.

The first and foremost endeavour of this Medical Council

should be the efforts at establishment of Medical Colleges, on the lines of the Royal Colleges of the United Kingdom, not certainly in antagonism to the existing Medical Colleges of India, but with such rules as are just and reasonable and as are generally practised in other civilized countries. The existence and progress of such Colleges will be the means for the unification of the medical profession in India.

So far as the agitative side of the work is concerned this is only a supplement to the former; in fact it is subsidiary and narrow in its aim, in so far as it is but an attempt to redress the wrongs of those in Government service. Propaganda on constitutional lines is necessary.

Let us, therefore, be up and doing. It requires all the inspirations, enthusiasm and wealth which the medical fraternity of India can command, and if I read the times aright I am sure they will be ere long concentrating their energies to the fulfilment of the plans laid above and set to work for the uplift of the Profession, heedless of frivolous conventions, unawed by malignity and unpampered by petty whispers of selfishness.

Burma. R. N. AYYANGAR.

**The position of Registrars
Who are already Asst.-Surgeons.**

SIR,—I send herewith an article describing the condition of the M.C.P.S., S.A.S.'s (Registrars) who are promoted to the rank of Assistant Surgeons. The position at present is—

1. That they are not allowed private practice.

2. That they are neither provided with free quarters nor any house-rent is given in lieu thereof, despite the fact that there is no private practice allowed to these persons. (This matter has been represented and I hear that it is under the consideration of Government).

3. That they are not given the posts held by and meant for other Assistant Surgeons (M.B. B.S.) than those of the Registrars although—

(a) They (M.C.P.S.) are better qualified in as much as they are obliged to score more percentage of marks at the M.C. P.S. Examination than at the M.B., B.S. Examination in some subjects.

(b) They have to pass a special examination in diseases of the nose, throat and ear which is not prescribed in the course of M.B., B.S.

(c) They (the majority) have done the teaching work as tutors at one or other of the different Medical Schools for many years.

(d) They have served at the big Civil Hospitals for many years and have better practical knowledge than the raw M.B., B.S. candidates.

4. That the tenure of the Registrars is not fixed, which should be fixed now and it ought not to be for more than one year. As all the subordinate posts in any department have got one or two years' tenure as a general rule, and as these posts are the worst meant for the Assistant Surgeons the tenure need not be for more than a year in any case.

5. In short these Registrars' posts although meant for Assistant Surgeons are a white elephant to those who enjoy them at present; or in other words a Registrar is an Assistant Surgeon minus all the advantages enjoyed by an Assistant Surgeon.

K. M. HIRANANDANI, C.M.S.,
L.C.P.S.

Hyderabad, Sind.

OUR ACTIVITIES.

Baroda.—(1) Meeting held on the 21st May, 1922, with Mr. M. L. Kapadia in the chair. Seven members were present. This meeting was held to wish *bon voyage* to Mr. M. N. Patel proceeding to England for further medical study and higher qualifications. The members

wished him a successful career in England and a safe return to India.

(2) Meeting was held on the 18th June 1922 with Mr. M. L. Kapadia in the chair. Five members were present.

Resolved that a congratulatory letter be addressed to H.E. the Dewan Sahib Sir Manubhai N. Mehta, Kt., C.S.I., M.A., LL.B., on his being honoured with a Knighthood by His Majesty the King-Emperor on the last birthday.

Burdwan.—The first meeting of the All-India S.-A.S. Association, Burdwan Branch for the year 1922, was held under the presidency of Mr. Bidhubhusan Bannerjee at the residence of Dr. A. C. Mitra, on the 27th April, 1922, at 5-45 p.m. Ten members were present.

Resolved that Mr. Amulya Chandra Mitra be elected President.

Mr. B. N. Banerjee and Mr. B. B. Banerjee, Vice-Presidents,

Mr. A. B. Mukherjee, the Secretary,

Messrs. S. C. Mitra and H. C. Sen, Joint-Secretaries, and

Mr. S. C. Mitra, Treasurer of the Association for the year 1922.

Resolved that, as the last Annual Conference of the All-India S.-A.Ss.' Association

could not elect under certain circumstances the Provincial Secretary for Bengal, this Association nominates Mr. Amulya-chandra Mitra to be elected the Provincial Secretary for Bengal for the year 1922. This resolution should be communicated to other branches of Bengal.

Dacca.—The second annual sitting of Dacca Branch of the All-India Sub-Assistant Surgeons' Association, took place on 2nd July 1922, at 7 p.m., in the Ghish Pharmacy Hall. Twelve Members were present:—

A letter from Burdwan Branch, dated 27th April 1922, was read before the meeting. The suggestion of electing Mr. Amulya-chandra Mitra as the Provincial Secretary, Bengal, was approved unanimously.

An interesting paper on Antimonial Salts and their use was read by Mr. D. M. Chanda and a nice discussion took place regarding the subject.

Gujarat.—(1) Meeting held at Dr. Joseph Benjamin's Dispensary, on Sunday, the 30th April, 1922, at 6 p.m. Seven members were present.

1. The copy of the memorial received from Poona was read and it was resolved to record it.

2. The drafts prepared to be sent to the Secretary to Government, General Department, Bombay, and the Surgeon-General with the Government

of Bombay, were read and adopted and it was resolved to send them to the above two officers.

(2) Meeting was held on the 11th June 1922. Eleven members were present.

The following resolutions were passed:—

(1) That members of the Gujarat Branch of the All-India Sub-Assistant Surgeons' Association offer their hearty congratulations to Dr. Shankarlal Keshavlal Vyas, Vice-President, on the title of Rao Saheb which His Excellency the Viceroy has been pleased to confer upon him on His Majesty's last birthday, and wish him health and long life to enjoy the well-merited honour.

(2) That a copy of the above resolution be forwarded to Rao Saheb Dr. Shankarlal K. Vyas with a forwarding letter.

(3) That members of the Gujarat Branch of the All-India Sub-Assistant Surgeons' Association do place on record their sense of loss at the death of D. Ram-singh, Ex-President of the Association, who for a number of years took a keen interest in its affairs, and express their deep sympathy with the family of the deceased doctor in their bereavement. That a copy of the above resolution be sent to his son Mr. Mohan Singh with a forwarding letter.

Nagpur.—Meeting held at Mayo Hospital, Nagpur, on the 9th July, 1922. The following resolutions were unanimously passed.

1. That this meeting most heartily congratulates Dr. K. G. Nerurker on his success at the last B.Sc. examination of the Allahabad University.

2. That the memorials to the Hon'ble the Minister be submitted by all the Sub-Assistant Surgeons in this province by the 20th July at the latest.

3. That the Government be requested to kindly reply to this Association letter No. 31, dated the 27th March, 1922.

4. That the Inspector-General of Civil Hospitals, C.P., be requested to give time, place and date to meet a deputation consisting of a few members of this Association.

5. That the second Provincial Conference of this Association be held sometime in the month of October, and that a circular letter to this effect be sent to all the Sub-Assistant Surgeons in the province.

Rangoon.—Meeting held on 21st June 1922. Mr. Lal Chand was in the chair. Thirteen members were present.

(1) Mr. N. K. Nair was elected as Joint Secretary *vice* Mr. Megin resigned on transfer.

(2) Resolved that Messrs. Mg. Po Mya, Nand Lal and

Sunder Singh be congratulated on their promotion to the Assistant Surgeon grade and Mr. Doulat Ram on the receipt of Birthday Honours.

(3) That the Medical Superintendent, R.G.H., be interviewed in person by some member or members to be hereafter chosen *re* certain disabilities under which the Sub-Assistant Surgeons in Rangoon General Hospital are labouring.

(4) That the I.-G., C.H. be informed that this meeting feels acutely grieved by his office M.D.C. No. 6-B.R., dated 12th June 1922, embodying the instructions of the local Government contained in its Financial II Dept., letter No. 617 of 26th April, and requests that recommendation be made that the privilege of drawing salary on Gazetted officers' salary form already enjoyed by them should not be withdrawn. It regrets to note that, while the Sub-Assistant Surgeons have been asking for further improvement in their station, such petty privileges as the one in question should be withheld from them and feels obliged to bring to the notice of the I.-G. C.H. as the custodian of their interests that such acts will be construed as highly unsympathetic and are likely to engender more discontent in the service than the major grievances often brought home in memorials

(5) Understanding that the erection of additional quarters for the Sub-Assistant Surgeons in the Rangoon General Hospital is under contemplation, this meeting requests that the I.-G. C.H. will be pleased to afford this Association an opportunity of looking into the type-plan so that suggestions may be made for their improvement or modification without much increase in expenses.

NOTES AND COMMENTS.

We have received, with thanks, samples of the "Elixir Digestive Tonic" of Messrs. M. J. Vora & Co., Chemists and Druggists, Bombay, and have great pleasure in testifying to its efficacy.

We are glad to announce that this year's session of the All-India Sub-Assistant Surgeons' Association will be held in December at Indore, the Headquarters of our revered General Secretary. We take this opportunity of requesting all our Branches to take the necessary steps for the election of delegates and to co-operate in every way for making the Conference a success.

We have received a copy of the reprint of a paper on "Considerations of the social environments and other causes contributing to the spread of Tuberculosis in this country", prepared by Rai Baha-

dur Gopal Chandra Chatterjee, M.B., and published in the *Calcutta Medical Journal*. The writer, after dealing with the causes of the disease, refers to the Tuberculosis-aid Societies, Tuberculosis after-care Societies and other institutions started in England and other European countries to help the sufferers with pecuniary aid and also with proper advice. He then draws attention to the Tuberculosis Colony scheme which has been started at Papworth, England, and gives expression to the opinion that it contains the germs of a principle which, if correctly appreciated, will lead up to its adoption with very little expense in this country."

Major-General William H. B. Robinson, whose sudden death, at the early age of 59, is so much regretted by all who have known or heard of him, was one of the most popular medical officers who have served in India. Entering the I.M.S. in 1886, he saw active service early in his career. Later on, his services were lent by the Government of India to some of the prominent Native States, where his name is still remembered with feelings of affection and gratitude. When the great European War broke out, he accompanied the Indian Expeditionary Force to Egypt and held the appointment of

Deputy Director of Medical Services there for three years. Soon after his return from Egypt he was appointed Surgeon-General in Bengal. It must be gratefully recorded in this connection that he was very sympathetic towards the Sub-Assistant Surgeons and took a great interest in our Association, at the Thirteenth Annual Conference of which he was the distinguished President. It is also noteworthy that he was deeply interested in the Calcutta School of Tropical Medicine and had taken a large share in the work which culminated in the opening of that Institution. Another death, by which the medical world is distinctly a loser, is that of Sir Patric Manson, M.D., whose investigations, as is well known, have resulted in substantial good to suffering humanity. It will be remembered that in the early seventies he first detected the agency of the mosquito in spreading Elephantiasis. Following this, he and his disciples discovered that Malaria and Yellow Fever were due to infection by mosquitoes. The fact that it became possible, by destroying mosquitoes in their breeding places, to free Calcutta and Panama Canal zone from Yellow Fever and to make the fever-ridden Campagna habitable, speaks volumes to the highly useful nature of his investigations.

The particulars we give below regarding the hard case of Mr. Kudrat Ali, First-Class Sub-Assistant Surgeon, I.M.D., will, we feel sure, arouse general sympathy. Soon after the outbreak of the Great War, Mr. Kudrat Ali proceeded with the Indian Clearing Hospital to East Africa where he was taken prisoner in August, 1915, and remained as such till October, 1916. During his captivity he suffered very much on account of the treatment that was accorded to him, and he lost his health and was invalided to India. On his arrival here he represented his case to the Heads of the Medical Department and prayed for compensation for the hardships suffered by him. His representation meeting with no response, he submitted an appeal to the Commander-in-Chief in India, representing all the circumstances connected with the case; but no satisfactory decision, we are told, has yet been made on the same. It is noteworthy that the hardships suffered by Mr. Kudrat Ali have rendered him permanently unfit for general service and, as has been testified to by the Medical Board, have reduced his efficiency by 80 per cent. That, in spite of these lamentable facts, his appeal should not have met with the consideration it deserves is indeed highly to be regretted.

The Report of the Surgeon-General regarding the Anti-hookworm campaign carried on in Madras during January 1st to 31st March, 1922, is an interesting document, showing, for one thing, that the efforts of the authorities have not been discouraging. There is one particular passage in the Report which we wish to draw pointed attention to. "What has been attempted", it is said, "was to spread the knowledge of the essential facts about Hookworm disease to the largest number of inhabitants, and substantiate this knowledge by actual demonstrations of the ease with which the disease may be cured and prevented and of the improvement in health following the treatment". We are glad of the line of action adopted because efforts of this kind will go a long way in preventing, not to speak of checking the growth of and curing, diseases.

We are indeed very sorry that, in spite of the persistent agitation that is being carried on by our Association and by its various branches, the authorities in several Provinces seem to be very slow in meeting the legitimate demands of the Sub-Assistant Surgeons. This attitude on the part of the authorities should, not, however, damp our ardour, but

should, on the other hand, spur us to fresh activity. It is gratifying to note that such a spirit dominates several branches of our Association; and, as will be seen from the proceedings of the branch meetings and memorials published elsewhere, the claims of the Sub-Assistant Surgeons are still being urged on the attention of the authorities with earnestness and determination. If such a constitutional agitation is kept up, we are sure that sooner or later, sooner than later, we shall have the gratification to record that the grievances of the Sub-Assistant Surgeons have ceased to exist. We shall revert to this subject in our next issue.

The All-India Sub-Assistant Surgeons' Association.

Statement of Accounts for the Month of June, 1922.

Dr.	Rs.As.Ps.	Cr.	Rs.As.Ps.
Balance brought forward from last month's account ..	13,319 2 10	Postage ..	145 13 0
Subscriptions from old and new members including admission fees ..	1,218 2 0	Stationery ..	15 2 6
Advertisement ..	258 8 0	General Charges ..	54 10 0
Interest on 5 years Postal cash certificates for Rs. 5,812-8-0 ..	1,687 8 0	Establishment ..	286 0 0
		Rent ..	63 0 0
		Advance ..	50 0 0
		Total Rs. ..	614 9 6
		Balance Rs. ..	15,868 11 4
Grand Total Rs. ..	16,183 1 10	Grand Total Rs. ..	16,183 4 10

Details of Balances :—	RS.As.Ps.
General Secretary ..	608 4 0
Editor ..	2,684 9 4
Imperial Bank, Indore..	2,636 1 0
Fresh 5 years' Postal Cash Certificates ..	7,562 0 0
5 years' War Bond ..	1,500 0 0
Government Promissory Notes ..	500 0 0
Amount in Postal Saving Bank at Ahmedabad ..	170 1 7
Treasurer ..	118 11 8
With various Office-bearers ..	148 12 9
Total Rs. ..	15,868 11 4

G. D. KHANDEKAR,

M. C. P. S.,

Treasurer,

The All-India S. A. S. Association.

JOSEPH BENJAMIN,

ARMEDABAD, Chairman.

23rd Aug. 22. Finance Committee.

SURJOO PRASAD,

RAI BAHADUR,

General Secretary.

In the "statements" published in the last issue, please read, in page 353 and 354, the name of the Hony. Auditor as "G. R. Khanwalkar" in place of "G. D. Khandekar," the latter being a mistake, which we regret.—Ed

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Indian Medical Journal

A Monthly Magazine devoted to Medicine,
Surgery, Public Health, etc.

Published by the All-India Sub-Assistant Surgeons' Association.

EDITED BY D. V. VENKAPPA.

Vol. XVI]

AUGUST, 1922.

[No. 8.

OUR CAUSE, AGAIN.

It is one of the unwritten and well-appreciated laws regarding public administration in any enlightened country that every opportunity should be given to all classes of public servants for a free and unfettered display of their intelligence, capacity and talents. To impose, on the other hand, arbitrary and unwarranted restrictions affecting their career, pay and prospects is to narrow their outlook, damp their enthusiasm and stunt their energy; and it is a truism to say that the efficiency, tone and morale of the Public Service will be considerably impaired if it contains a body of persons whose hearts are sore on account of the unfair and inequitable treatment that is accorded to them and whose grievances, in spite of long-continued agitation, still remain to a considerable extent unredressed. We are extremely sorry that in India these wholesome considerations do not seem to have weighed sufficiently well with the authorities. A notable instance of this is furnished by the disabilities of a class of Public servants whose earnestness, capacity and devotion to duty have evoked warm commendations, but who, nevertheless, have been, so to speak, branded with a stamp of inferiority not at all

in consonance with their qualifications and the nature of the duties they have to perform—we mean, the Sub-Assistant Surgeons. It is about two decades now since this class began to feel that organised action was necessary to get their disabilities removed; and it was this wide-spread feeling that gave birth to the All-India Sub-Assistant Surgeons' Association—an Association which was started for the pursuit and promotion of scientific knowledge, for the cultivation of an *esprit de corps* among the members of the Class and for the advancement of their educational, social and material conditions. This Association and its various branches have, at their successive sessions, been passing resolutions and submitting memorials to Government on the subject of the grievances of the class. And, as the official organ of the Association, the *Indian Medical Journal* also has striven to the best of its lights, to focus official attention on this subject.

In spite, however, of such an agitation by means of the three P's. what is our position to-day? No doubt, some improvement in pay and prospects has been made, in instalments, in certain provinces, and we are thankful for the same. But, with regard to a good many of our grievances we are still where we

were years ago. In the first place, so far as medical education is concerned, our disabilities have not been removed; the curriculum of studies in our medical schools remains the same although the justice of our claims has been acknowledged in high quarters. In the words of the resolution on the subject passed at the last year's Conference, "the minimum requirements of the western system of Medical Education are a fixed preliminary educational standard and a full five years' curriculum in a well-recognised teaching institution as fixed by the British Medical Council." It is highly necessary, therefore, that for efficient medical training and for the removal of the existing invidious distinctions, the authorities should take the necessary steps for the introduction of complete courses of study. As regards the pay of the Sub-Assistant Surgeons, though, as we said, some increase has been made in certain provinces, the scale we have been agitating for—*viz.*, Rs. 100 to 350 in India and Rs. 150 to Rs. 400 in Burma—has not yet been sanctioned. So far as charge allowance, duty allowance, house allowance, jail allowance, etc., are concerned also, these Public servants are still labouring under disabilities which call for complete and immediate removal. Then, again,

with regard to the promotion of the Sub-Assistant Surgeons to the Assistant Surgeons' grade, the existing system is grossly unfair and ought to be changed as early as possible. The appeal we once again make to the Government is to grant at least 10 per cent. of the post of the Assistant Surgeons to the members of the Sub-Assistant Surgeons' class who have put in ten years' service. The Military Sub-Assistant Surgeons also, as has been repeatedly pointed out in these pages, are smarting under several grievances, the redress of which ought not to be further delayed. And last but not least is the question of the bond system, which, in spite of the attempts at justification made in certain quarters, cannot stand careful and dispassionate scrutiny and which, therefore, in the interests of fairness, ought to be abolished as early as possible.

The work of the Sub-Assistant Surgeons has been uniformly appreciated and no word of disparagement has emanated from any quarters. From his place as the President of the 13th Annual Conference of the Association, Major General Robinson, Surgeon-General, of revered memory, said that during his service of nearly 33 years he had been very continuously associated with Sub-Assistant Surgeons in all capacities and had a fairly

wide experience of their conditions of service as prevailing in various parts of India. "I have served with you," he continued, "in Assam, Burma, Baluchistan, Gilgit, Rajputana and the Central Provinces, and I must say, Gentlemen, that I have met many very worthy, highly willing and keen members of your service, many of whom I gladly count among my friends." Even more emphatic was Lt.-Col. G. T. Birdwood in his presidential address at the Fourth U.P. Provincial Conference. "I have always looked upon the Sub-Assistant Surgeons," said he, "as the backbone of the medical profession of India, medical men on whom the vast rural population scattered throughout the Province have to rely for help and advice in times of need and sickness . . . Believe me, the Government and the nation value your services very greatly. I sympathise with the objects of your Association." Again, a former Lt.-Governor of the Punjab characterised it as "a serious blot on our medical organisation" that "such skilful operators (*viz.*, Sub-Assistant Surgeons) should be condemned by our system never to be able to rise above the post of Sub-Assistant Surgeons without going through a college course." And no less a person than a former Viceroy of India, to wit, Lord

Chelmsford, in the course of the address he delivered in opening the Exhibition that was held in connection with the 15th session of our Association, observed that ever since he had been in India, he had been hearing of the good through unobtrusive work done by the Sub-Assistant Surgeons. "Your work," he added, "lies largely in remote parts of this vast country and is performed chiefly among the voiceless masses, and it is, no doubt, for these reasons that the high character of your services is principally known only to those amongst whom you work and to your immediate superiors I cannot think of any report on plague, famine or other epidemic which I have read without finding a reference to the good work done by Sub-Assistant Surgeons, and your praises are continually sung to me by those responsible for the medical administration of the country. During the Great War you volunteered in large numbers and acquitted yourselves always with credit and often with distinction. Gentlemen, you have a fine record behind you and I can only exhort you to go forward and add to it." These encomiums are highly complimentary to the class; and we feel gratified that the silent and unostentatious work of the Sub-Assistant Surgeons has elicited such encomiums. But fine words

butter no parsnips; and, as the late Nizam of Hyderabad once said, sympathy, if it has to be well appreciated, must be translated into action. We mean no disparagement to any of the high personages mentioned above when we say this; on the other hand, we feel grateful to them for the words of encouragement and hope they have so kindly expressed. But so far as practical steps for the redress of our grievances are concerned, we cannot help characterising the policy of the authorities in several Provinces as lukewarm and step-motherly. If, as Lord Chelmsford said, it is the Sub-Assistant Surgeons who come most in contact with the "voiceless masses", and if, as the Director-General of the Indian Medical Services observed, the Government of India "fully recognise" the value of their services, we must say that, at least in the interests of the voiceless masses, not to speak of the interests of justice, equity and fair-play, the Government should lose no time in making this service, in the words of the Director-General, "a happy and contented one" by an early and radical redress of their grievances.

We feel that a word to the members of the class also will not be out of place in this connection. It is one of the cardinal canons of constitutional agitation that

not only must the cause agitated for be just, but there must also be a powerful organisation behind it—an organisation whereby united efforts can be put forth with single-minded earnestness, untiring energy and unabating vigour. Ours undoubtedly is a just cause and by our efforts we have been able to secure some substantial results. But it will be a folly if we rest on our oars now: we have to continue our efforts with even greater earnestness and vigour; and for this our organisation must be more efficient and there must be greater corporate action among us. Our Association must be able to count as its members the majority, if not all, the members of the class, and a well-chalked out programme must be earnestly followed for the further professional, social and material advancement of the class. We appeal to every member, and particularly to the younger generation, to strive towards this end by getting more members enlisted and in all other ways; and we hope and trust that by such efforts a powerful impetus will soon be given to our movement leading ultimately to a complete and unqualified success.

DRUGS.

BY HARICHARAN GUPTA,

Muktagacha, Mymensingh.

It may briefly be said that at present Doctors are giving up

drugs, while the Public are taking them up: They are being abandoned by experience and adopted by ignorance. We speak, of course, of drugs as a whole excepting a few such as quinine, mercury, iron, etc. More than half a century ago, Dr. Oliver Holmes said: "I firmly believe that if the whole materia medica could be sunk to the bottom of the sea it would be all the better for mankind and all the worse for the sea". Again Dr. Osler said: "He is the best Doctor who best knows the worthlessness of drugs".

Twenty years ago there was a tendency to make this system of treatment a rational one, but now-a-days as regards medicine we mainly depend on patent drugs. In other words, we have become agents of distinguished druggists of America and Europe. We know nothing of the ingredients of those drugs and still we don't hesitate to prescribe them, like so many blind followers of a Hindu *Guru*, throwing away the Pharmacopea and thus allowing the whole system to degenerate. The inevitable consequence will be that the present Pharmacopea will be altogether discarded and the whole system will digress from the scientific track. One may be inclined to ask as to what the modern Doctor thinks is the use of him

if he has no opinion of the medicines which he gives. In fact, unless the Doctor gives medicines, his patients will all leave him. He must prepare something or other, preferably with a substantial flavour, smell and colour in order to please the patient. The action is through the patient's mind upon the patient's body, a fact of which the patient has no idea; but a faith cure is none the less a cure, and a much better thing than no cure at all.

The *Popular Science* says that the chances that vegetable products will cure human diseases are almost *nil*, quinine being the one exception. Thus morphine, strychnine and atropine are of great use in medicine, though there is no form of disease which any of them cures. Vegetable drugs still outnumber all others many times over in the list of materia medica, but hundreds of them might be permanently forgotten without anything worse taking place.

Syphilis was long regularly treated with a vegetable drug called Sarsaparilla; but, of course, now-a-days no Doctor treats syphilis with it. In short we now know that syphilis treated with Sarsaparilla was untreated. Another drug is Tr. Arnica, which has long held, and which even now enjoys, a great reputation as

a specific in the treatment of bruises. But the matter has been tested, and we know that, if the Arnica be omitted from the tincture, the medical action of the alcohol completely achieves the good results with which the Arnica was formerly credited. In the mineral world we find a parallel state of things. Iron, arsenic, mercury and sulphur certainly have their uses and doubtless always will have. For instance, iron in certain forms of anæmia, mercury in syphilis, and sulphur in many parasitic diseases of the skin, are not to be denied the title of cures. But on the whole, the drugs derived from the mineral kingdom are in a state of decadence in modern scientific medicine. An excellent illustration of this truth is furnished by the celebrated drug called antimony and its various medical preparations, which were popular so long, and must have done hundreds of thousands of unfortunates to death. Like all other drugs, antimony has had to face the tests of modern science, and it has been found wanting. It depresses the essential functions of the body, beginning with the heart, and is probably worse than worthless in all conditions of disease. But now-a-days we are striving to prove the utility of antimony by using it profusely in Kala-azar. So either of the two theo-

ries regarding antimony must be unsound. Up to date antimony has got such a preponderance in the treatment of Kala-azar that it may be said to be the sheet anchor in the treatment of this malady. I invite our eminent colleagues to find out the truth between these two contradictory things, *viz.*, the denouncement of antimony in the *Popular Science* referred to above, and the use of it in our present practice in the treatment of Kala-azar.

Now I shall turn my attention to another matter. We have long cherished an antagonistic feeling towards Homeopathy; but our third system of treatment adopted by us is practically leading us towards *Similia Similibus Curantur*. According to the old doctrine one wandered about a field or jungle to pick out a leaf of some quaint shape more or less suggesting an animal organ, and then used decoction of that leaf for supposed maladies of that organ. If that was regarded as sound reasoning, obviously there was something to be said for actually giving doses of the liver of an animal to a human patient whose liver was supposed to be out of order. According to the Bible we find that certain facts of emotion and desire have their seat in certain bodily organs such as liver, spleen and kidneys. Here, again, was an argument for administer-

ing drugs of animal origin to sick people. More than 25 years ago I have seen one of our Professors giving spleen pulp to a patient of Kala-azar when quinine and arsenic failed to produce any effect.

The chemistry of the plant is irrelevant to the chemical process of man, but, on the other hand, the chemistry of the bodies of animals must surely be very closely allied in many ways to the chemistry of the human body. So a sheep which is a mammal like ourselves, could be applied to ourselves, and they might, for instance, just contrive to supply a deficiency in our own chemical resources. And that is exactly what has been found. In the antitoxin treatment of diphtheria, for instance, if the poisonous juice or toxins of the microbe be brought into relation with the tissues of the horse, those tissues produce an antitoxin, which neutralises the poison. By no other process yet known can this antitoxin be produced, for no chemist in his laboratory has yet the clue to the inimitable and subtle chemistry of the life of the horse, whereby this antitoxin is produced. If we inject this antitoxin from the horse to a child attacked with diphtheria the result is almost instantaneous. No child treated on the first day ever dies, scarcely any treated on the second and so on. The drug is relevant.

Symptoms are generally called diseases and causes are ignored. But causes matter everything; for only causation will give us the key to cure. Now, as there are really few diseases, though countless symptoms, probably as many symptoms as there are people,—for we are all different and react differently to similar things;—it follows that there need be but few drugs that really cure. One for each disease would be quite enough. Thus the tendency of the Pharmacopoea is from the many and generally useless, to the few and useful. Sometimes ago one of the distinguished Principals of the Calcutta Medical College expressed his opinion at a meeting that he could fight out any disease if he was allowed to handle a few selected drugs of the B.P. Some people may say that the most competent physicians use no drugs now a days; but it is not true. Thyroid extract is, of course, a drug and so is the Diphtheria antitoxin and the modern Physician uses them. The thing is that where their predecessors used scores of drugs they scarcely employ more than a dozen.

So far as drugs for producing particular effects upon the body are concerned, we have yet to find those which are without risk or danger. The ideal hypnotic, the ideal antiseptic, the ideal anesthetic, do not yet exist. The pa-

tient may be persuaded to swallow coated antiseptics, in consumption, such as creosote, in order to kill the microbes. If the general antiseptic is efficient, it is also deadly to the patient's body; and if it is indeed harmless to the patient, it is harmless to his enemies. In future we expect to get special antiseptics so made as to kill or neutralise special parasites or special poisons and without and other action. The diphtheria antitoxin is a case in point.

Real curative drugs are made by our body itself. So the natural antiseptics are also produced by the body to kill its enemies. It may be surprising to many to learn that spontaneous cures are always going on in our bodies without our knowledge. In conclusion I must say that patent medicines are largely consumed by people of small income and therefore the question of their cost is also important.

X-RAY IN ORIENTAL SORE.

By LT. N. B. MUGHE, S.A.S.
J. A. Hospital, Lashkar.

Oriental Sore, which is known specially here as Gwalior Boil, is a disease which is mistaken for an ordinary boil or ulcer covered with broken scabs. This is a specific ulcerative affection caused by Leishmaniasis and hence its name cutaneous Leishmaniasis.

This is more common in hot countries. The disease is conveyed by direct infection from person to person through broken skin. The incubation period is varied. In the beginning the subject gets fever and several pruriginous spots appear on the skin which can be mistaken for mosquito bites and which gradually become red shotty with inflamed areola which afterwards becomes indurated. The papule gradually enlarges, the surface soon loses its glossy appearance and small scabs form over it. After some days ulceration of the nodules begins. At first it is superficial secreting yellowish exudation forming later on a hard and adherent scale. Under this scale ulcerative process goes on spreading. Surrounding skin becomes more or less oedematous and if the scale is removed a big ulcer is seen. It is not much painful. Lymphatic glands are not involved unless other infection gets in. It heals after a long time resulting into a cicatrix which is liable to break down again. These may be single or multiple.

The favourite situation of this disease is feet, legs, hands, arms and face. Very seldom only is it observed on palms, soles and scalp and it attacks people irrespective of age and sex. Diagnosis is very clear. The following points may be borne in mind:—
(1) Affected area, (2) Few eruptions.

(3) The course of the disease. (4) The obstinacy to ordinary treatment of boils or ulcers. (5) No connection with the lymphatic glands. The last and the most important is the demonstration of Leishmania microscopically. Prognosis is good.

It is specially for the treatment by means of the X-Rays that I have written these few lines. Of late the X-Ray treatment has been going ahead by leaps and bounds and so the same case is applicable in treating this disease. This treatment is now very easy and least troublesome to the patients and so they are always willing to undergo it when they see the disease disappearing without any perceptible feeling and when, on the other hand, they experience a great pain in intravenous injections of Antimony Tart., which is, no doubt, a specific. It is true that some people get frightened at the sight of the electrical apparatus, its preliminary arrangements, and the noises of the interruptor and of the sparks; but when assured of cure they give preference to this method of treatment. So far as the preparation of the patient is concerned, if the sore is recent, no special preparation is necessary; but if it is of long duration the following technique must be adopted. In the beginning apply poultices frequently to the affect-

ed parts, by means of which all the scabs and discharges can gradually be removed. After this the wound may be dressed by Boracic Oint. No metallic ointment should be used because X-Rays cannot penetrate the metal and hence there will be no effect on the sore. Before exposing the subject the danger of exposing large areas in patients suffering from Bright's disease must be borne in mind. The parts not required to be exposed should be well covered with lead glass or lead sheets thus preventing the X-Ray from penetrating these areas. The distance between the tube (from the anti-Kathode) and the subject should be six inches. The Ampere Meter on the primary circuit should read five amperes which can be regulated by means of resistance introduced between. The Mille Ampere Meter on the second circuit should record 2 to 2.5 Mille Amperes. After all these arrangements are made, the person is placed on the table and the part to be exposed is well focussed. Care should be taken to see that no part of the patient's body touches any metallic part of the apparatus, lest he experiences a severe shock. With the above standard readings the patient is given full Sabaurand pastile dose. It will not, I believe, be out of place if I explain what the term "full Sabaurand pastille

dose" means. To estimate the intensity of the dose Sabaurand has constructed a small disc of paper coated with platino-cyanide of Barium. These pastilles change colour from canary yellow to a brown when fully exposed, and thus noticing the colour of the disc a maximum dose can be given without any danger to the patient. These pastilles should not be exposed to daylight; otherwise they will be deceiving the X-Ray operator in estimating the dose.

In some special cases the time is shortened but the reaction is slow. It is always wise to be on the safe side. For if the exposure be stronger than necessary it will cause mischief instead of rooting out the disease. I have seen such a case in which the patient had very severe dermatitis only after one exposure, which got allright after some soothing applications. When the disease is acute the feet should not be exposed. In other cases if you see any signs of dermatitis the exposures should be discontinued till the signs disappear. Col. Walter says that amongst his patients treated by X-Ray there was no failure, and here too the results are satisfactory. In some cases only one exposure has hit the mark. In some others it required exposures varying from eight to twelve. In some other cases, again, four to six exposures were required. In one

case only I have found that it was a failure; in this case perhaps more exposures were necessary, which could not be given, on account of the impatience of the patient, as is always the case, the sufferers requiring a speedy recovery, no matter how severe the disease is. After the treatment any simple ointment will do as dressing.

WHAT IS ACUTE INDIGESTION AND WHAT SHALL WE DO FOR IT?

In the hurry of a busy practice it is easy to class many minor indigestions as "acute indigestion," give a hypodermic of morphine and rush off, returning next day to find the patient either quite ill or unnecessarily narcotized. Such tactics are poor policy. A genuine attack of acute indigestion is a serious matter that frequently leads to a fatal issue, while in minor indigestions morphine is about the worst possible drug to administer.

Kemp said: "By many physicians the term 'acute indigestion' is made applicable to, or synonymous with, certain forms of gastralgia, toxic gastritis, acute atony, acute dilatation of the stomach, or, lastly, acute ectasia." Morse, who favors accuracy, stresses ectasia (acute dilatation) as the form of acute gastritis to which the term "acute indiges-

tion" should be applied. Bassler, who runs strong on pathology, divides and subdivides the various forms of acute gastritis. He evidently does not like so nebulous a term as "acute indigestion" and proceeds to outline several conditions so-called by hasty clinicians.

Personally, from considerable study of the condition, and from "inside information" in our own person, we agree with Morse and lay emphasis on ectasia. Certainly all physicians see a class of cases that are of severe type, come on suddenly, reveal by percussion an acute dilatation of the stomach, and that may be readily enough mistaken for angina pectoris, perforation, intestinal obstruction, or peritonitis. While there is not the extreme prostration and collapse noted in ptomaine poisoning, there is a degree of shock, extreme pain, vomiting as a rule, tachycardia, subnormal temperature, low blood-pressure, intense thirst and an entire absence of muscular rigidity.

When Called to a Case.

Doctor, when you are called to a case of what appears to be acute indigestion, don't make too hasty a diagnosis or immediately mask the symptoms with morphine. This drug may be indicated; if it is indicated, give it, but not until after a diagnosis has been made and, if a true acute indigestion, not until after the stomach

has been evacuated and an enema has been administered.

Please bear in mind that we are not here considering ptomaine poisoning, the forms of acute gastritis occurring in acute fevers or infectious diseases, the heart-liver-kidney symptom-complex kind, those due to abdominal trauma, or even ordinary, every-day indigestion due to flouting the 'do not's' of ordinary prudence; but these remarks bear wholly on the kind of acute indigestion or gastric ectasia defined by Morse. Certainly excesses in diet or drink, or both, are responsible for many cases, in fact for most of them; but an acute gastric ectasia is a far more serious matter than is the ordinary indigestion so frequently called "acute indigestion."

Be Prompt.

Morse says: "Unless recognized early, these cases are bad, and present a formidable condition, the death rate being very high. Our present knowledge of the proper method of treatment should greatly reduce the mortality."

Shattuck has given the principles of treatment very clearly, as follows: 1, removal of cause of symptoms; 2, rest and warmth for the patient; 3, rest for the digestive tract; 4, symptomatic treatment.

Immediate evacuation of the stomach by a mustard emetic or,

preferably, by lavage, washing out with sodium bicarbonate solution, is the first thing to do. Do not give depressing emetics. It is the worst of policy to tie up the system with morphine, allowing the slow method of intestinal elimination of the offending matter to endanger the life of the patient. If there is abdominal distention, which is common, give an enema.

Now, ~~having done these things,~~ the patient will be weak, but not in such extreme pain. The second indication must now be met by covering him warmly in bed, freely using the hot-water bags, and, if he still suffers appreciably, giving one hypodermic dose of morphine. The morphine may help to overcome shock. Physicians should remember that shock is not solely a surgical matter, as a real shock is more common than is commonly thought to be the case in many non-surgical conditions. It is a wretched thing to do to rush right off from a case of acute indigestion and allow the patient to suffer hours from shock, when the proper use of strychnine, camphor, ether, whisky or other drug may be imperatively necessary.

Don't give purgatives at once; wait a few hours, when calomel, followed by salines, is indicated.

Rest for the digestive tract must not be omitted. Sometimes even water gives distress. Give

ice. Sometimes one-drop doses of tincture iodine are useful, but the extreme thirst and exhaustion are best met by enemas of not saline solution, or by hypodermoclysis. Symptomatic treatment must not be overdone. Don't give a lot of bulky messes to these patients. The so-called digestants will do no good. Give little medicine, but do not allow a diarrhoea to exhaust the patient. The principal thing is proper dieting.

A Serious Matter.

Let emphasis be placed on two facts: First, most cases of so-called acute indigestion are nothing of the sort described here; second, a real cause of acute gastric ectasia is almost as serious an emergency in the medical field as is appendicitis in surgical practice.

SOME INTERESTING SURGICAL CASES.

(From the "American Physician.")

BY IRVIN HARDY, M.D.,

Morgantown, W. Va.

An Ectopic Gestation.

CASE 1.—Was called one rainy night, at 10 P.M., to see a woman, eighteen miles distant in the mountains. Took two nurses and started for my destination.

Owing to the fact that the driver of the Universal car did not know enough to keep water in the radiator, we had to get out and push up steep grades. When within a couple of miles of my

destination I slipped off a rock (while pushing) and fell into a mud hole. This was the proverbial last straw, and the vocabulary utilized, in the following few minutes, is not to be printed.

Arrived just at peep of dawn, and found Mrs. B., aged twenty-eight, mother of two children, unconscious. Color of face, ears and lips indicated severe loss of blood. Diagnosis of ruptured ectopic pregnancy made. Operated in an improvised operating room, after giving a gloomy prognosis. Found the foetal mass, large as a baseball, free in the peritoneal cavity. There was so much blood in the abdomen that it ran over the table on to the floor when the abdomen was opened. Removed both tubes, because it has been observed that the other tube, if not removed, would be likely to give the same trouble. Left a good nurse with her, and had her given proctoclysis for three days, and she recovered nicely.

It is my opinion that tubal pregnancy occurs very much more frequently than is generally believed, and that nature takes care of the woman in many cases, and the surgeon does not see the case. This case also emphasizes the fact that a patient who is very ill from loss of blood may not be so bad a surgical risk. A patient as ill as this one, and whose condition was due to shock, instead of hemorrhage, would most likely die.

A Cystolith.

CASE 2.—Mrs. X. came to the hospital for the operative removal of a stone from the urinary bladder, the family physician having previously made the diagnosis, by the use of the sound, and by palpation through the vagina.

She had been troubled by this condition for several years. More or less cystitis was kept up, and the stone was so large she said she could feel it flop over when she would turn over in bed. The stone was removed by a suprapubic incision, and measured an inch in diameter, was circular in shape and was quite heavy.

This case is cited because of the comparative rarity of stone in the female bladder, and to remind us that an enlarged prostate is not the only cause of a stone in the bladder.

A Teratoma.

CASE 3.—Miss C. was brought to the hospital with a diagnosis of acute appendicitis, of the ruptured type, with peritonitis.

She had more or less rigidity of the abdominal muscles, but the pulse and temperature did not indicate peritonitis. However, the case was one of acute abdominal trouble, and evidently a surgical case. The point of maximum tenderness was on the right side of the abdomen, at about McBurney's point.

Upon opening the abdomen, a large amount of creamy fluid escaped, and ran off the operating table upon the floor, where it immediately congealed. This lead me to suspect a dermoid cyst, which was found to have originated in the left ovary and proved to be a teratoma. It had evidently been quite large, judging from the amount of fluid that escaped at the time of rupture. Lying in the sac of the ovarian cyst was found a half of an inferior maxillary bone, which contained several well-developed teeth, also a ball of hair about the size of a baseball, which looked as though it had been wrapped by hand. The hair corresponded with the color of the patient's hair.

The foetal inclusion theory of Cohnheim seems the best, as to the origin of these cysts; and this case is reported to emphasize the importance of operation in acute abdominal troubles. Also, in my practice, this type of ovarian cyst has been very uncommon.

The Efficiency of the Fowler and Murphy Treatment.

CASE 4.—Was called to see a young woman, single, age twenty-two, who lived about fourteen miles out in the country. Found her unconscious, temperature 104, pulse very rapid. Diagnosis of ruptured appendix, with peritonitis, was made.

By this time the light of day had gone and the patient was in a room having an open fireplace. We had perhaps two or three drams of chloroform, but plenty of ether. Oil lamps and lanterns were the source of light by which to operate. The chloroform was soon exhausted, and ether given within three feet of an oil lamp held in the hands of a farmer neighbor.

An incision was made in the appendicial region, drainage tube inserted, patient put to bed in the Fowler position, and Murphy's solution given by a nurse who knew how. The patient recovered, and a few months later came to the hospital, and I then removed her appendix.

The Fowler and Murphy treatment were responsible for this girl's recovery. A few individuals, who had not "the nerve" to say so while Murphy lived, are now doubting the efficacy of Murphy's Proctoclysis. One might say like in the Dakin-Carrell treatment, "It is ninety per cent. technique," but we do not wish to use such a statement. One who fails to see the benefits of Murphy's solution, in pus peritoneal cases, either does not have it properly given, or there is a decided pathological condition of his perceptive apparatus.

Had Murphy done nothing else, besides giving to the profession

this one boon, he would have done more than any other one surgeon in the last century.

The Nephrolith—A Plea for Conservative Surgery.

CASE 5.—Mrs. E., aged forty-three, multipara. Had been in poor health for two years. Anæmic, general condition bad. Came to hospital for diagnosis and treatment. Examination showed quite an enlargement of left kidney with a large stone present. Incision was made along the quadratus lumborum muscle, and the kidney delivered. The kidney was incised and about half a pint of pus released. The stone was removed through an incision in the pelvis, after which the pelvis was sutured. A rubber drainage tube was put into the kidney, and secured by a stitch of number one plain catgut.

This drain was removed in ten days, and in three weeks the patient left the hospital in good condition, and has enjoyed good health for five years since operation.

A great deal of the kidney was destroyed by the suppurative process, but I am sure that the healthy part of that kidney is doing good work, and is a very valuable asset to the owner.

This is a plea for conservative work on the kidney. I am of the opinion that many useful kidneys are sacrificed, that the sur-

geon may point with pride to his living nephrectomy case.

Cases with multiple stones may be treated by drainage and removal of the stones, and later the kidney may be removed if it is found necessary.

Serious Injury, Prompt Surgery and Skin Grafts.

CASE 6.— Mary O., age five years, was struck by a large touring automobile and dragged for a distance of fifty yards over a brick road. Most of the skin and fascia had been ground off the right abdomen, and downward on the thigh. Scarpa's triangle and its contents were exposed. The anterior superior spine of the right ilium and some more of the hip bone had been ground off by contact with the brick roadway.

She was brought to the hospital as soon as possible, and was found severely shocked. Treatment for shock was instituted, and in the meantime the urinary bladder was catheterized, with the result that three or more ounces of urine, free from blood, were drawn off. Shock had somewhat subsided, and I quickly opened the abdomen on the left side and found no injury to the viscera, no blood or feces present. We lost only twelve minutes by this procedure, and we learned that she had a good chance for recovery.

Had there been an intestinal

rupture, and had we waited until a diagnosis could have been made from the symptoms, we would have lost our patient.

We used skin graft on the abdomen, which were furnished by her mother and which were rather disappointing. I have found autogenous grafts to be far superior to homogenous.

The case is reported chiefly to illustrate that we must have the courage to carry out our convictions. The age of this patient and the serious nature of her injuries made it a case to cause one to think promptly and act quickly.

NOTES OF CASES.

I

A Case of Abnormal Labour (Hydrothorax and Ascites in the Fœtus.)

BY MAQBUL ALAM, L.M.P.,
*Senior Sub-Assistant Surgeon,
Municipal Hospital, Syriam,
Burma.*

On the 13th August 1921 at 11-30 P.M. I was called on by the municipal midwife to attend a delivery case which she was unable to manage alone.

On arrival at the patient's house I found a Burmese woman, Mashwe Hte by name and about 32 years of age, in labour.

History:—She was a multipara, this being the sixth pregnancy. All the previous labours

were normal. All five children alive and healthy.

No twins. No history of venereal or any other family disease. Husband quite healthy and strong. The woman was weak, emaciated and very nervous and is said to have been very irritable and quarrelsome since the beginning of the pregnancy. Easily fatigued on slight exertion during the pregnancy, complained of exhaustion. Usually could not fast on fast-days during the pregnancy, nevertheless could not eat properly. Feeling of tightness and fulness in the abdomen and the chest often, although the bowels were regular. There was no fever or vomiting since conception. Said to have been behaving like a mad person at times during the pregnancy.

The previous labours usually started in the 10th lunar month, but the present labour came on in the 9th month. The pains were very short and at long intervals. They were felt only at the pubes. No pain over the back. On arrival I found the woman in great distress, having been in labour for the past two days, with an abnormally large abdomen. Two small fetal feet were protruding outside the vagina, which I was informed had been presenting for about an hour. The feet and legs were so small as to give rise to a suspicion of twins with heads interlocked, but on examination,

to my great surprise, I could not feel even one head. The abdomen was soft all over. On auscultation I could hear the fetal heart sounds quite clearly, but very rapid, on the right side of the patient's umbilicus. Not having found the heads I thought of inertia of the uterus due to overdistension and to weakness of the patient and gave an injection of 1 c.c. of Infundin into the right thigh but without effect. I tried to extract the fetus by pulling on both its legs, but found them broken. Someone may have tried this before my arrival. They broke off and were removed, but the body remained in the same position. I put the woman under chloroform and passed my hand into the uterus and found a big sac-like-body with a very small head, which was flexed backwards on to the neck in the fundus. I performed version with great difficulty and brought the head out by forceps.

Undoing the forceps, I tried to pull out the body by gentle traction on the head, but the head and the neck separated easily leaving the body in the uterus. I had no other instruments at my disposal at that time and there being considerable bleeding from the broken neck of the fetus I wished to finish the labour as quickly as possible. I therefore caught hold of a hand: this broke off, being very small: subsequent-

ly the other hand and the shoulders also broke off. The clavicles were also broken on making traction but still I was unable to extract the body. I then perforated the thorax with my finger and about four pints of clear fluid came out. The body even now could not be delivered, as the abdomen was very big. I perforated the diaphragm with my fingers and more than five pints of clear ascitic fluid came out, whereon the sac-like-body was at last delivered. The placenta had to be stripped off and the bleeding stopped by injections of Infundin and Ernutin. The uterus was thoroughly cleaned up with a hot Jeysol douche, all bits of the membranes being removed by hand. On examination of the fœtus, the extremities were seen to be very small in comparison with the huge body. The neck was very small and the head consisted mostly of face; the back of the head was smaller than usual and there were some upper cervical vertebræ, but no dorsal, lumbar or sacral vertebræ. There were only two ribs on each side. There were no lungs and no liver could be made out. There was a heart. The sex of the child could not be determined there being no genitals and no orifice at all at the lower part of the abdomen, either anus or urethra. There was a thin coil of intestine which

was fastened down to one side of the sac-like-body in its middle portion but this did not reach the lower part of the abdomen.

The thorax and abdomen, being distended with fluid caused the difficulty in delivery.

The body was a sac, divided by a diaphragm, both portions being distended with fluid: the thorax containing only the heart, and the abdomen a thin coil of intestine unconnected with an anus.

Kidneys and other organs could not be found. There was no fissure down the back. The absence of vertebræ was discovered on inspection from within. The patient developed Bronchitis but recovered rapidly and was up on the 9th day without any other further complications.

II

Acute Strangulated Hernia (right side).*

BY RAJA RAM, S.A.S.

Civil Dispensary, Lahore.

I was deputed by the Civil Surgeon, Lahore, to attend a case of Plague at Khen Karn. While I was there, I was asked to see a patient who was said to be seriously ill. I examined the said patient on 12th April 1922, at about 1-30 P.M., and found the following:—

An inflammatory swelling on the right side of abdomen along

* Read before the fourth Punjab Provincial Conference of the A. I. S. A. S. Association.

the course of the inguinal canal descending down to the scrotum. It was very painful and tender. His pulse was quick. Temp. was 99 degrees. Heart sounds normal. Lungs healthy. Liver was slightly palpable.

He vomited pure bile about three or four ounces whilst I was sitting by his side.

PATIENT'S STATEMENT.

He said that he had already consulted Dr.—— (an expert Surgeon of the Province) who advised him for the operation. He gave history of long standing Inguinal Hernia which descended down many times; but could be reduced easily. It came down this time four days before, but he could not reduce it in any way. He also said that he got attacks of biliousness at intervals of a month and sometimes of two. The Hernia came down this time also on account of biliary vomitings. I diagnosed it to be a case of Acute Strangulated Hernia and advised immediate operation to which he agreed.

There being no dispensary in the village, I sought the help of a compounder who is a Practitioner there. The Compounder provided me with all the necessary instruments and chloroform and boiled some muslin to use as sterilized dressings and towels.

I started the operation under all antiseptic precautions at about

5 P.M. on an ordinary writing table supporting his legs on an additional chair. When I opened the sac, I found these structures to my astonishment. I took one to be an inflamed appendix and the other a pendulous growth attached to the omentum.

The appendix was very much inflamed with patches of gangrene in it. The growth was also inflamed and gangrenous in some parts.

I removed both of them, closed the sac and stitched up the wound.

The patient came to senses after half an hour as usual and found himself comfortable; but the biliary vomiting increased in frequency.

On the 13th, he felt better; but the vomiting continued. He also had temp. 100 degrees in the evening which came down by ordinary treatment.

On the 14th, he had no fever and no vomiting. I opened the dressing and found the wound quite healthy. I opened the dressing only for my satisfaction, as I had to leave the village on that day. I left the patient under the supervision of the said Compounder to whom I am very grateful, and who carried out all the instructions which I gave him regarding the patient. I saw him next on 21st. I was glad

to see him quite alright. His wound has healed up and stitches were removed. I have dealt with many cases of hernia in the field, but every time either I have found intestine or omentum in the hernial sac. I remember one interesting case of Lance-Dafadar A.R. who was brought in the hospital in a most miserable state of Rt. Inguinal Strangulated Hernia. I kept an ice bag on the swelling and injected Morphia Hydrochlor gr. $\frac{1}{4}$ hypodermically at about 5 P.M. The pain was relieved at 7-30 P.M. and I reduced the Hernia with a little pressure; but the swelling did not come down very much.

When I operated the next day, I found the hernial sac continuous with the vaginal sac and the omentum was found in it adherent to the globus major and minor. I excised a good piece of omentum and the rest I introduced back into the abdominal cavity. I transfixed and ligatured the neck of the sac and cut it off; but carted and stitched the vaginal part of it.

The patient improved marvellously.

MEDICAL ITEMS OF INTEREST.

Obesity in Women.—A. Leclercq (*Societe de Medicine de Paris*, Oct. 22, 1921.)

We meet two forms of obesity in women. One, the alimentary form,

does not differ from the same type in men. The other form is more frequent and is a toxic type peculiar to women which rests upon a deficiency in the ovarian and thyroid glands.

In combating this toxic obesity the author advises a vegetarian regimen low in chlorides; also theobromine, sulphate of soda, massage, hydrotherapy, and especially ovarian and thyroid extracts (six to twelve grains of powdered ovarian extract per day, three to six powdered thyroid) alternately or simultaneously. The administration of thyroid must be carefully watched to avoid the production of tachycardia in those whose hearts are impaired.

Leopold Levi remarked that a purely ovarian obesity has not been proved to exist and that in his experience ovarian treatment has never diminished flesh. Thyroid obesity is an established fact, but thyroid treatment often fails and is dangerous in women with fatty hearts.

Antineuritic Value of Certain Orchitic Preparations.—H. Penau and H. Simonnet (*Bulletin General de Therapeutique*, December, 1921).

Testicular lesions, such as arrest of spermatogenesis, disappearance of the interstitial cells, sclerosis, and atrophy, are so marked in the course of experimental avitaminosis that these authors decided to ascertain whether this organ was capable of supplying vitamins to undernourished pigeons.

In one pigeon intramuscular injection of an alcoholic extract of ram's testicle brought about relief of polyneuritic symptoms on the nineteenth day of deprivation of vitamins and similar success was met in other instances. Buccal administration failed.

The conclusions presented to the Paris Societe de Therapeutique at a

meeting on November 9, 1921, were that alcoholic extract of testicular substance exercises a curative influence over polyneuritis in birds; and that early attacks are more readily benefited than later ones and the result, while not permanent, is at least a prolonged retardation. Still, they recognize that the extract is not shown to be prophylactic by the fact of its being curative; and it is by the possession of preventive qualities that a substance can rightly be called antineuritic.

The Relation Between the Adrenal Cortex and Sexual Development.—K. H. Krabbe (*Revista Americana de Farmacia, Medicina, y Hospitales*, August, 1921).

Numerous instances are collected from the literature of precocious sexual development wherein adrenal tumors were found on autopsy. A correlation of the symptoms observed in these with the results of histological examination and the views of various authors leads the writer to the conclusion that development of public hair and beard in female infants with tumors of the adrenal cortex is not to be regarded as a symptom peculiar to precocious puberty, but as a natural component of hypertrichosis. This hypertrichosis and the growth of a large clitoris and the transformation of the voice in small girls are to be looked on as a virile development resembling that in adult women caused by tumor of the adrenal cortex and the virile fetal characteristics (feminine pseudohermaphroditism) seen in women with adrenal hyperplasia. Only in boys and in a single case of adrenal tumor in a ten year old girl has genuine precocious puberty been found.

Many authors argue from these facts that an intimate relation exists between the sexual organs and the

normal function of the adrenal cortex, such that a hormone produced by the cortex, exercises a special function in developing the secondary sexual characteristics. This theory seems based on insufficient grounds. The existence of virilism in girls and women with tumors of the adrenal cortex especially cannot be accepted as an explanation of the view that the cortex has some sort of an influence over normal sexual development in women.

Study of the reciprocal relations existing in early fetal life offers an explanation which appears more plausible. Numerous investigations have proved that the ovary is hermaphrodite in its initial stages. The external cortical portion is ovarian, the internal medullary portion is testicular. This testicular portion bears a relation at this period to the adrenal cortex, which develops from the mesentelium next after the genital gland. In cases where tumors of the adrenal cortex have caused virilism it seems likely that the tumor has not developed from the ordinary cells of the adrenal cortex, but from fetal testicular cells which have been absorbed by the cortex and have developed into a sort of a false cortex.

Rapid Course of Addison's Disease in a Child.—P. Lereboullet and Peignaux (*La Presse Medicale*, May 6, 1922).

A ten year old girl entered hospital with typical Addisonian melanoderma, asthenia and digestive disturbances, which had been developing for about five weeks. Death took place ten days later with evident manifestations of renal insufficiency in the form of torpor, vomiting, abdominal pain, cerebral symptoms and so on. Hyperglycemia had been found. The patient had a left ophthalmic herpes when first examined.

At autopsy far advanced tuberculous lesions of the adrenal glands appeared, clusters of caseous tubercles, and the lungs contained very discrete caseo-calcareous lesions of the apices. Beside these, a cretaceous tubercle was discovered at the base of the right lung overlaid by the diaphragmatic pleura, and a caseo-calcareous gland at the right hilum. No other visceral lesion was found.

The case is remarkable particularly for the clearness of the clinical syndrome referable to uncomplicated adrenal tuberculosis without macroscopic lesions of the sympathetic.

The Use of Pituitary Extracts by Mouth in the Treatment of Diabetes Insipidus.—M. H. Rees and W. H. Olmsted (*Endocrinology*, March, 1922).

In a man of thirty-seven years troubled for two years with diabetes insipidus to such an extent that he passed as much as twenty litres of urine in twenty-four hours, salol coated capsules of posterior pituitary extract were found to control the thirst and polyuria as satisfactorily as did hypodermic injection of the fluid extract, provided only that a bedtime dose was included in the daily schedule.

Stricture of the Urethra in Women.

Wm. E. Stevens (*Cal. State Jour. of Med.*, Feb., 1922), says: Stricture of the urethra in women is a condition which is very often overlooked, although it may be responsible for marked functional and organic disorders in the genito-urinary tract of this sex. Herman, of London, following the examination of 55 women without symptoms, concluded that the normal size of the female urethra is F 29, a little less than 10 millimeters. Van de Warker expressed the opinion that a urethra from F 23

to F 28 should be considered normal. Examination of 114 patients at the Stanford Women's Clinic disclosed the fact that only 18 or about 16 per cent. had never suffered from symptoms referable to the urinary tract. Following urethral calibration in these 18 cases, the author found the average size of their urethra to be F 26 or a little less than 9 millimeters. As to symptoms, frequent urination is the most common. It occurs in over 85 per cent. of the author's clinic and private cases. Subjective symptomatology was not taken into consideration in the patients confined in the detention ward of the San Francisco Hospital, as many of these deny disability, hoping to be released as soon as possible. Next to this symptom, pain referred to the urethral or bladder regions is the most prominent symptom. This symptom occurs in 64 per cent. of the cases. Burning or smarting are present in 26 per cent., urgency in five per cent., and difficulty, constant desire to urinate, partial incontinence, dribbling and retention of urine, were each present in two and a half per cent. of the patients. Residual urine is seldom found except in the presence of very tight strictures. The diagnosis is best made by means of the olive-tipped bougie. A urethratome or sound is much less reliable, as stricture usually yields to slight pressure, and consequently higher readings result from use of the latter instruments. The majority of urethral strictures should be treated by means of gradual dilation, absorption of the constricting exudate being best promoted by this procedure.

His conclusions are as follows:

Stricture of the female urethra is relatively common, and consequently calibration of this organ should be part of the urological examination of every woman and child complaining

of symptoms referable to the genito-urinary tract.

Strictures of the female urethra respond readily to proper treatment, and their early detection will prevent pathological lesions of the upper urinary tract secondary to this condition.

Curettage and the Treatment of Uterine Hemorrhage.

Beckwith Whitehouse (*British Med. Jour.*, Dec., 1921,) groups cases of pathological uterine hemorrhage under one of the following headings:

(1) Menorrhagia, a term limited to excessive hemorrhage relating simply to the quantity of blood lost at a menstrual period.

(2) Menostaxis, denoting excessive menstruation as regards duration of the flow, the discharge consisting chiefly of the secretion of the uterine glands.

(3) Epimenorrhoea, signifying too frequent menstruation, in other words, an alteration of rhythm.

(4) Metrostaxis, denoting uterine hemorrhage apart from and having no relation with menstrual bleeding.

It includes not only all hemorrhages before puberty and after the menopause, but also all irregular bleeding during a woman's active sexual life.

This classification the writer has found very useful in practice, as it divides one's cases into well-defined groups, and affords a basis for investigation and treatment along rational pathological lines.

Whitehouse repeats his protest against indiscriminate curetting for all cases of obscure uterine hemorrhage. The operation may do good, but the chances are equally against it if the cause of bleeding is not directly dependent upon pregnancy.

As a diagnostic procedure, however, curettage is of paramount importance,

especially when the microscopical appearances of the endometrium are considered in relation to the history of the case and the character of the uterine discharge.

To curette a uterus and throw away the curettings is comparable to treating hemoptysis without examining the sputum.

Hemorrhage from the uterus is a symptom of such diverse conditions involving the whole realm of medicine that no one remedy such as curettage can ever be expected to prove effective in all cases.

Radium is no doubt a valuable agent for controlling uterine hemorrhage due to ovarian and endometrial inco-ordination. It is also a useful remedy in those cases due to hypertrophy or atrophy of the endometrium.

In checking hemorrhage at puberty and the menopause radium must exert its peripheral action on the ovaries, as the endometrium is inactive from under-development or atrophy respectively.

When uterine hemorrhage is the result of inco-ordination or various hormones, curettage will be but palliative, or will fail completely, unless combined with other therapeutic measures designed to combat the primary cause.

OUR GRIEVANCES.

IN BURMA.

The following are extracts from the Report read by Mr. R. Brahuspathy, Provincial Secretary, at the First Burma Provincial Conference:—

Memorials after memorials have been submitted for a revision in pay, but somehow or other

it had not pleased the Officers to grant what had been craved for, for so many years. After strenuous struggle the benign Government condescended to grant an increase, but the members are not content with it as they feel that the small increase now granted does not make their position in any way better. In Madras they are striving to get a start of Rs. 100 as here, and the rumour is in the air that the Surgeon-General with the Government of Madras strongly recommends this and there is a probability of its early sanction. If such were to be the case, it is not unfair to demand a starting pay of Rs. 150 here as prayed for in the memorial submitted during 1920, especially in due consideration of the preliminary qualifications and the professional training for four solid years and the high cost of living. The grant of petty allowances sounds ludicrous and should be stopped and should be replaced by a consolidated allowance of a decent amount. Pension, leave facilities for post graduate study, study leave and presidency allowances are also matters of vital importance.

Jail Duty.—The Inspector-General of Prisons, Burma, deserves our hearty thanks for taking a good many suggestions made by a deputation that waited on him. Jail allowance has been increased, the tenure of service

limited to two years and provision of trained paid Compounders accepted. Though he saw eye to eye with us in regard to the benefits of appointing Medical Deputy Superintendents, it is unfortunate that he could not agree to bring the scheme into force placing the medical subordinates independent of the Jailor, who is far inferior in his educational and other qualifications. The idea of compelling the Sub-Assistant Surgeon on night duty to sleep within the sombre walls is not only bereft of any material good but is also highly disheartening to the medical subordinate in as much as the latter can do very little in the shape of first-aid through the grated windows in a dim and flickering light, until the arrival of the Jailor who is allowed to sleep in his quarters. Besides, the danger of exposing the S.A.S. to the mercy of the prevailing diseases in the jail, particularly Tuberculosis, which of late is very prevalent in jails, should be recognised by the Inspector General who should redress it, as early as possible.

Military Men.—The fate of Military Subordinates is miserable. Times without number has the case of granting Indian Commission to the L.M.P. from the very start of their professional career been advocated. The authorities were frugal in grant-

ing the Commission only after 5 years of service. Is it needless to assert that the status of a warrant officer in the Indian Army is an anomaly? The most vital factor that depresses a L.M.P. is the restraint placed on him not to express his feelings in black and white. His grievances, wants and feelings have to be voiced through his medical officers. We strongly urge on the Medical Council the desirability of issuing definite understanding in the matter.

Public Health.—In England all Registered Medical Practitioners, whether graduates or diploma holders, are allowed to take D.P.H. Course. But in the case of L.M.P. whose qualification is registrable in Indian Medical Councils a barrier has been raised and he is excluded from the D.P.H. Course that had been instituted in the Tropical School of Hygiene, India. He is, so to speak, out-casted and a less worthy and a less conspicuous degree L.M.H. has been contemplated for the L.M.P. Why there should be such narrow-minded policy passes our comprehension.

He is not entitled to write an application for leave. His Medical Officer has to write it on his behalf. The members will feel greatly relieved should the privileges enjoyed by those in

Civil duty be extended to them. For, it is unjustifiable to place him on a level with illiterate Sepoys. The Military Assistant Surgeons enjoy the privileges of getting posts of Civil Surgeoncies and other responsible and lucrative posts. Is it not, then, right to expect similar considerations in the case of Military Sub-Assistant Surgeons? The questions of providing better types of quarters, increased family pension, granting leave freely, curtailing frequent transfers, sanctioning presidency and personal allowances and study leave are also points that should receive the early attention of the authorities.

Miscellaneous.—When good work and loyal service are appreciated and awarded with higher appointments and promotions it is depressing to members in Railways and Municipal Services in not getting such encouragement. Posts of a higher grade should be created and reserved for worthy and deserving members. Promotions to higher grade seem to have come to a dead stop; for some years we have not heard of any such promotions. Is it because there are no worthy candidates in the cadre? Surely there are many who are smouldering for want of encouragement. The time limit bar should also be removed and the selection grade done away with.

Medical Council.—We have appealed and appealed in vain that the percentage of elected members to be returned to the Council should be fixed on certain basic principles. How can two members of the L.M.P. Class whose lot is mixed up with Indian Medical Graduates and Licentiates voice the feelings and opinion of over 500 members? We once more, in the name of the class, request that the seats for the L.M.P. be increased to at least 2 per cent. Sometime ago there was an attempt to do away with the countersignature of Civil Surgeons on certificates granted by the private medical practitioner. But still we find the officials and heads of departments follow the old pet methods.

Medical Education.—In Bombay there are only two kinds of medical qualifications, *viz.*, the degree conferred by the University and the Diploma by the College of Physicians and Surgeons. The same state of affairs exists in Bengal; whereas in Madras they stick to the old and obsolete procedure of granting two kinds of degrees by the University and three kinds of Diploma by a Board of Examiners who have no fixed constitution. Hence it can be easily seen that there is no uniformity in the system of medical education, one claiming superiority over the other. In the British Isles there

are two kinds of medical qualifications, *viz.*, the degrees conferred by the University and Diplomas of Colleges. But here both the qualified men are on equal footing. In America, Japan and other places there is only one medical qualification, *viz.*, M.D. It cannot be denied that, after weighing deeply the pros and cons of the case, the majority will support the idea of having only one qualification for a medical man. As there is not an atom of justification for a multiplicity of qualifications which are calculated to rob the efficiency of the profession and to cause wanton artificial difference, we venture to suggest that steps should immediately be taken, whereby the cause of constant discontent can be rooted out.

If it is contended that a big programme of such a nature will have to be postponed for various reasons, we shall be pleased to restrict the suggestion to only one point, *viz.*, to make the qualification of L.M.P. registrable in the United Kingdom by finding ways and means to adjust to its requirement. The Medical Reorganisation Committee has hopelessly failed to handle the problem of medical education and it is high time for the authorities to do something in this direction.

Stipend and Bond System.—Having once pledged to receive the stipend the student is hope-

lessly fettered with conditions that may be brought up from time to time. He signs a bond which makes him to implicitly obey the orders of the Department. The tenure is now extended to ten years in the Civil and *ad limitum* in the Military. In no other Departments is such a system in existence. It is, therefore, our earnest and humble request that the system of taking bonds be immediately done away with.

CORRESPONDENCE.

The Reorganisation of the Medical Department.

SIR,—There can be no two opinions that the Medical Department is one of the benevolent departments which it has now become the privilege of mankind to take benefit of. It will be outside the compass of such a short note as this, to dwell at length on the origin, history and the development of the department of Medicine and the Profession connected with it. How far it has attempted to meet the evil effects of newly sprung epidemics, the epidemics which unhappily at a single sweep carry away the best of the units of our society, is a sufficient testimonial to its claims on the coffers of the State to enjoy a life full of health and efficient development. With the newly sprung diseases, it is incumbent on the

Department to work for new inventions and new modes of treatment. In short, it is a department which, if not kept up to the mark, may cause most disastrous results to mankind.

My first suggestion is that recruitment should in future be made by means of a common All-India Medical examination, under the direct control of an All-India Medical Board which may be constituted as stated below:—

1. All-India Chief Medical Officer (Chairman).
2. An Assistant to the above (Vice-Chairman).
3. A member having the portfolio of Medicine and Research work.
4. ———do———Sanitation.
5. ———do———Jail or Prison.

The salary of these Officers may be as follows:—

1. Three to four thousand Rupees per month.
2. Two to three thousand Rupees per month.
- (3 to 5) One to two thousand Rupees per month.

There should be an All-India Medical University of examining type, with one or more Colleges of Medicine and Surgery in every province affiliated to the University. The Colleges should have common courses of study in all the branches. There should be only one examination called as

the All-India Medical Examination to which even the recruits holding diploma from foreign Universities should be subjected.

The successful candidates either from the Colleges or from the list of those holding foreign diplomas and appearing in the above examination, should be divided into the following three groups according to their respective merits:—(1) First group securing 80 per cent. of the aggregate number of marks. These can be appointed as Chief Medical Officers in the Provinces (similar to the present Civil Surgeons).

(2) Second group securing 60 per cent. of marks. These can be employed as Medical Officers of the grade of the present Assistant Civil Surgeons.

(3) Third group securing 40 per cent. of marks. They can be taken in as Assistant Medical Officers.

It should be the duty of the Board to select suitable candidates out of these for acting as teachers or professors for the colleges according to their special proficiency in any of the subjects, i.e., the subjects in which they show remarkable merit by securing the highest number of marks. The respective salaries of the above classes should be as follows:—

(1) Rs. 500 to 1,000 per month.

(2) Rs. 250 to 500 per month.

(3) Rs. 100 to 250 „

The primary advantage of this system is that every one will get a free and equal chance of competition.

For the subordinate class of service, candidates who pass from the Middle Standard should be selected for an year's training in Pharmacy, Compounding, Dressing, preparations for Operations, etc. They can rise from Rs. 25 to even Rs. 100 (in case of special merit) and be called Hospital Assistants.

Visiting fees may be fixed at the rate of Rs. 2 in the case of Assistants, and Rs. 4 in the case of Medical Officers; while in the case of Officers of the higher rank it may be Rs. 8, the fees for night visits being double that of the day.

A word about the management of Hospitals. The present ticket system is very troublesome and leads to the unpopularity of the Medical Officers. It should disappear altogether. The whole management can be divided into three parts. (1) *Building*.—This can be placed completely under the charge of the District Council. (2) *Staff* including the menials, The Government should be made responsible for this entirely. (3) *Contingencies and the Cost of Medicine*. The Municipality or the Local Body should be respon-

sible for this. Everybody then may have the right to be treated free in the Dispensaries.

These are the broad outlines of the scheme which twenty years' experience of Government service on my part, commend themselves to me, and which I venture to place humbly before the Public.

N. W. KALEY,
S.A.S.

SOHAGPUR.

OUR ACTIVITIES.

Bombay.—Meeting held on 19th August 1922. The following resolution was unanimously passed:—

Resolved that this meeting of the All-India Sub-Assistant Surgeons' Association, Bombay Branch, Bombay, respectfully but strongly protests against the new nomenclature "S.M.S." instead of "S.A.S.". This meeting thoroughly agrees with the opinion of the Surgeon-General with the Government of Bombay, expressed by him in his letter No. C/1004, dated 16th June 1922 to the Government of Bombay, and further resolves and respectfully requests the Surgeon-General to be kind enough to approach the Government again in this connection and have the present designation "S.M.S." changed to "A.M.O. B.M.S." as originally suggested by him.

Dacca.—The first annual sitting of Dacca branch, took place on 15th February 1922. Thirteen

members were present. After the election of office-bearers and the members of the Executive Committee, it was resolved that this branch do express its deepest regret for the untimely demise of Major-General W. H. B. Robinson, C.B., K.H.S. I.M.S., Surgeon-General with the Government of Bengal.

Gujarat.—A Meeting of the members of the Gujarat Branch of the All-India Sub-Assistant Surgeons' Association, was held at Dr. Joseph Benjamin's Dispensary, on Sunday the 30th July, 1922.

Resolved that the draft representations to be submitted to the Secretary to Government, General Department, Bombay, and to the Surgeon-General as regards G.R. No. 237. Dated 4th July 1922 be approved and that they be submitted under the signatures of the President, Vice-President and the Secretary of the Branch.

Gwalior.—Meeting held on the 6th August 1922.

The Meeting was presided over by Capt. V. G. Gokhale, Civil Surgeon. Sixteen Sub-Assistant Surgeons were present at the meeting.

The following papers were read and discussed at the meeting:—

(1) "Treatment in diseases of digestion," by S.A.S. J. V. Gadre, Civil Dispensary, Morar

(2) "Small-pox and Vaccination", by Anantamurty, J. A. Hospital Laboratory, Lashkar.

Jubbulpur.—I. Meeting held on 16th July 1922. The following resolutions were passed:—

(1) That the Army Head-quarters should be requested to kindly amend Army Instruction (India) No. 526, dated 27th June 1922, as to grant the rates of gratuity to Sub-Assistant Surgeons according to their various ranks in the Indian Army as the present rates are derogatory to the status of the Sub Assistant Surgeons. The amended para. 3 of the above quoted Army Instruction (India) to read as noted below:—

Indian Officers (including Sub-Assistant Surgeons), Indian Other Ranks and Followers.

Officers above the rank of Jemadar (including Senior Sub-Assistant Surgeons, 1st and 2nd class, ranking as Subedars)—Rs. 120.

Jemadars (including 1st and 2nd class Sub-Assistant Surgeons, ranking as Jemadars)—Rs. 60.

Third class Sub-Assistant Surgeons ranking as Warrant Officers—Rs. 50.

Indian Soldiers above the rank of Naik—Rs. 36.

Naiks—24.

Other ranks—Rs. 18.

Permanent Followers—Rs. 8.

(2) That the copies of the resolution should be circulated to

all the military stations in India and N.W.F. with a request that the Sub-Assistant Surgeons in those stations should approach the Army Head-quarters through their superior officers for the amendment of the Army Instruction (India) in question and till then not to draw the gratuity.

II. Meeting held on 23rd July 1922. Eight members were present.

Resolved (1) That with reference to the negative reply from the Honourable Minister of promoting Sub-Assistant Surgeons to Assistant Surgeons, further action on the subject may be postponed pending the reply of the memorial which is being submitted now by the Sub-Assistant Surgeons of the Province.

(2) That the reply of the memorial be waited for, for a month and a half and afterwards a deputation be arranged by the Provincial Secretary to wait on the Honourable Minister for the final reply.

U.P. Provincial Branch.—

A Meeting of the Standing Committee of the U.P. Provincial Branch of the All-India Sub-Assistant Surgeons' Association, was held at Meerut, on July 10, 1922. Five members were present.

Mr. S. L. Sharma was in the chair.

Resolved that a deputation consisting of Rai Sahib Dr. Ram Narain Lal and four other members from Lucknow, should wait upon the Hon'ble the Minister in the last week of July to request him to give immediate effect to the enhanced scale of pay of the S.A. Surgeons and that the deputation be organised by R. S. Dr. Ram Narain Lal.

Statement of Monthly Account of the Family Fund, June 1922, Indore.

INCOME.		EXPENDITURE.	
Name of Item.	Amount.	Name of Item.	Amount.
	RS. A. P.		RS. A. P.
Balance on 1st June, 1922	384 13 6	Payment to calls—	
Deposit for calls—		Call 68 ...	11 0 0
No. 65-66 ...	2 0 0	" 69 ...	14 0 0
" 67 ...	1 0 0	" 72 ...	28 0 0
" 68 ...	...	" 73 ...	63 0 0
" 69-70 ...	2 0 0	" 74 ...	72 0 0
" 71-72 ...	4 0 0	" 76 ...	155 0 0
" 73-75 ...	4 0 0	Money order charges ...	2 6 0
" 76-78 ...	38 0 0	Total Rs. ...	345 6 0
" 79-81 ...	103 8 0	Balance for July 1922 ...	207 15 6
Further call ...	14 0 0	Grand Total Rs. ...	553 5 6
Grand Total Rs. ...	553 5 6	Manager.	
		Secretary.	

Statement of Monthly Account of the Family Fund, July 1922, Indore.

INCOME.		EXPENDITURE.	
Name of Item.	Amount.	Name of Item.	Amount.
	RS. A. P.		RS. A. P.
Balance on 1st July, 1922 ...	207 15 6	Clerk's Pay B. N. District May & June, 1922 ...	36 0 0
Deposit for calls—		Payment to calls—	
No. 71-72 ...	2 0 0	No. 71 ...	24 0 0
" 73-75 ...	6 0 0	" 70 ...	16 0 0
" 76-78 ...	13 0 0	" 67 ...	12 0 0
" 79-81 ...	47 0 0	" 75 ...	74 0 0
Further call ...	8 0 0	" 76 ...	14 0 0
Floating Balance ...	3 0 0	" 77 ...	155 0 0
Withdrawn from P. Bank..	500 0 0	" 78 ...	162 0 0
Grand Total Rs. ...	786 15 6	Money Order charges ...	2 8 0
		Stationery ...	1 0 0
		Postal Stamps ...	18 8
		T. A. Bill of Dr. G. A. Deshpande for Annual Conference, Bangalore ...	61 13 0
		Total Rs. ...	576 13 0
		Balance for August, 1922 ...	210 2 6
		Grand Total Rs. ...	786 15 6
		Manager.	
		Secretary.	

NOTES AND COMMENTS.

Mr. D. V. Venkappa, Editor of the *Indian Medical Journal*, has been re-elected as a member of the Madras Medical Council.

There are many Students and Medical Practitioners who at times need a really small and handy volume on Medical treatment and diet. "A Dictionary of Medical Treatment"* by Dr. James Burnet, will, we are glad to say, eminently meet this requirement. The author has succinctly and methodically dealt

with the treatment of all important diseases. The appendix on diet adds to the usefulness of the publication. The book has been out of print for some time, and the present volume is a revised edition. We are sure that the publication will be well appreciated by those for whom it is intended.

*"A Dictionary of Medical Treatment": A guide to Therapeutics for Students and Practitioners, with an appendix on diet. By James Burnet, M.A., M.D., M.R.C.P., (Edin.). A. & C. Black, Ltd., London.

ANNOUNCEMENT.

We regret that, owing to some unavoidable circumstances referred to already in a previous issue, there has been some delay in the publication of the last few issues of **The Indian Medical Journal**. With a view to make the publication current as early as possible, we are now constrained to publish some issues with reduced number of pages, for which we crave the indulgence of our readers; and we beg to announce that, after the publication is made current, due amends would be made for this reduction.

D. V. VENKAPPA,

Editor.

THE Indian Medical Journal

A Monthly Magazine devoted to Medicine,
Surgery, Public Health, etc.

Published by the All-India Sub-Assistant Surgeons' Association.

EDITED BY D. V. VENKAPPA.

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[No. 9.

MALARIA.

"Malaria, a problem of ages, is still a problem of to-day. We have discovered its etiology; we learned its mode of prevention, control and cure; but we still have it, and have it because we fail to enforce the several factors concerned in its eradication." This is the verdict of a prominent American Medical Journal, and, we feel sure, this view will be endorsed by everyone who has examined the question in all its bearings. It must be remembered that two conditions are pre-requisite for the germs of malaria; there must be an unprotected or non-immunized man and, secondly, there must be an infected

mosquito to bite him. The steps that have to be taken for prophylaxis, therefore, are the immunization of the man against malaria by cinchonizing him, and the prevention of mosquitoes from obtaining access to susceptible people and to malarial patients alike.

As a first step towards complete prophylaxis, measures can successfully be taken to reduce malaria in all places where it is prevalent. "This," in the words of Sir Ronald Ross, whose name will ever be associated with the anti-malarial campaign, "could be done by preventing their (the mosquitoes) breeding

in puddles, pools, marshes or every collection of water in which their larvæ live". He proposed this method in the early stages of the campaign for Freetown, Sierra Leone, whither he had proceeded to make investigations on the subject and where he went twice again to teach this lesson thoroughly; and the attempt was quite successful. In 1902 the Suez Canal Company completely cleared Ismailia of Malaria on his advice. There have been other instances also to demonstrate the fact that whenever and wherever the attempt has been made to apply the principle of prophylaxis to the solution of the malarial problem, a gratifying measure of success has uniformly rewarded the endeavour. In Italy, for example, during recent years an active campaign against Malaria has been carried out under Governmental authority. At the beginning of this century, 63 out of the 69 Italian provinces were infected, and the mortality from the disease in 15 years (*i.e.*, from 1887 to 1901) aggregated 227,265. We are also told that "about 12,000,000 subjects of King Victor Emmanuel were at that period subject to the odious domination of plaudism, the morbidity among the residents of the malarial zone being 87 per cent. of the entire population." As a result of the campaign the rate fell to 25 p.c. in 1905 and

to 6 p.c. in 1914. This reduction of Malaria, it is explained, was due to the activity of the public authorities in enforcing sanitary legislation, which Prof. Celli's experiments caused to be enacted. Under the Italian law, employers must pay for the quinine supplied gratuitously to workmen in malarial localities. To the employees of the Italian Railways alone 24,000 kilogrammes of quinine tablets are distributed annually; and, according to statistics for 1920, we find that in that one single year 2,330 of these workmen were immunized at a cost of 100,000 lire. It may not be out of place to mention in this connection that the investigations carried on in that country were not wholly original as they are occasionally claimed to be. "These gentlemen" (the Italian investigators), says Sir Ronald Ross, "by misrepresenting or omitting to mention my work pretended that their investigations were original though it is an easily proved fact that they were thoroughly conversant with everything I had done." Be that as it may, the comprehensive system of Malaria suppression practised successfully in Italy and at Panama has met with enthusiastic approval in many quarters. At the 15th International Congress of Hygiene and Demography in 1912, Dr. Craig, of the Medical Corps, U.S.A., declared

that the results achieved in Italy "furnish an incontrovertible argument in favour of quinine prophylaxis." Prof. Willman, of New Orleans, Dr. Thayer, of Baltimore, and others expressed the same opinion, deeming quinine indispensable for the control of the infection. According to Dr. Orenstein, drainage was the best defence against malaria in Panama and this view was endorsed by Col. Havard who referred to the extensive drainage works carried out by the Italian Government as an important factor in malarial control. Dr. Maus, another of those who took part in the discussion, emphasised the importance of barrack screening with wire, counting eighteen meshes to the inch, as a protective measure. The destruction of mosquitoes by draining swamps, filling in marshy grounds, oiling the surface of stagnant water, the introduction of effective screening, the treatment of newcomers from the native inhabitants, are, in short, the various methods of malaria prophylaxis suggested by the scientists who have investigated the problem. Mention may be made in this connection of an ingenious measure instituted in Algeria, where the irrigation ditches form breeding places for mosquitoes. It consists of an intermittent or

alternating water supply. The ditches are allowed to become dry at weekly intervals, so that the larvæ perish.

That the introduction of measures like those mentioned above will be crowned with success is evidenced by the substantial results achieved in Italy, America and other places. The Panama Canal zone, for instance, prior to 1904 was one of the most insalubrious regions of the world on account of the prevalence there of malaria and yellow fever, both mosquito-borne diseases. That country has, however, been transformed by sanitation and made habitable "so that white people in the Civil and Military service are able to maintain robust health and engage in strenuous work in a terrain which was once shunned as a grave-yard of the human race." In Arkansas, U.S.A., where malaria was exerting a sinister influence till about six years ago, the incidence was reduced 77.33 per cent. in a single season by the control operations of the Public Health Service. It was by overcoming formidable difficulties that this health crusade was carried on, demonstrating thereby the truth of the oft-repeated maxim that where there is a will there is a way. Another instance also it is pertinent to refer to here. Near Augusta Georgia, Anopheline mosquitoes were found in large

numbers on July 18, 1921, and a neighbouring pond swarmed with larvæ. On July 19, 2,000 top-feeding minnows were transformed to this pond. On July 20, we are told, no "wobble-tails" were visible. These and other instances of the material results achieved by the investigations and operations carried on by scientists and sanitarians, incontrovertibly prove that the control of malaria is not only feasible but is also comparatively easy. What is needed is a stern resolve on the part of the authorities and the hearty co-operation of the people.

In India, where malaria is the cause of the deaths of about 13,00,000 persons every year, the policy adopted by the Government in combating the disease is extremely inefficient, to say the least of it. This is the conclusion of no less a body than the Sanitary Commission appointed by the Government of India in 1918. It is a thousand pities that when, as a matter of fact, malaria has been proved to be preventable, sufficiently effective measures have not yet been taken to prevent the same. There are cities, like "benighted" Madras, where this disease is still rampant and where mosquito-breeding places, even in the heart of towns, are complacently tolerated. No wonder, then, the toll of mortality here is so heavy. Unless the authorities

bestir themselves and take energetic, efficient and radical measures, the dawn of a new era when malaria will have been completely exterminated or at least materially reduced, is as distant as ever.

TREATMENT IN DISEASES OF DIGESTION.

By G. V. GADRE, S.A.S.

Civil Dispensary, Morar.

Cases of dyspepsia and other diseases of digestion are so common in our practice that to treat them sometimes requires great perseverance and close study of the diet of the patient. It has been my experience that if a suitable diet can be found out, medicines can be dispensed with to a considerable extent. In chronic cases, the patients are so disgusted to continue the usual medicinal treatment that it becomes very difficult to treat the cases. It is a known fact that when digestion is defective there is deficient assimilation and naturally, therefore, anæmia and other concomitant signs of debility. Leaving aside the medicines the treatment can be summed up in the following few words:—

- (i) Lavage or washing out of the stomach.
- (ii) Enema.
- (iii) Suitable diet.

(i) *Lavage*.—Half a seer of luke-warm water mixed with one or two teaspoonfuls of common salt is found beneficial, when taken immediately on rising. Soda bi-carb may be added instead of the common salt, but the washing of the stomach with a rubber tube is the best of all. Whenever undigested food remains in the stomach either due to atony or dilatation of stomach or taking of large quantity of food or food hard to digest, there is no remedy that can equal the lavage. Lavage gives instantaneous relief. The only objection to its use is that a patient does not readily consent to its use. A compounder of mine was almost cured by the above method from dyspepsia when all ordinary measures failed to give relief.

(ii) *Enema*.—Washing out of the bowels whenever there is constipation or incomplete evacuation, by an enema is much better than ordinary laxatives or purgatives. Ordinary enema only clears the lower bowel but the American enema called J. B. L. Cascade flushes the whole of the large intestines and one feels the water going up to the ileo-cæcal valve. Not only the whole of the faecal matter is removed, but the danger of auto-intoxication owing to intestinal stasis is warded off. Those who often

require the use of purgatives should try the enema. All my patients who are using it are doing well. The only objection to it is its high price.

(iii) *Diet*.—The question of diet is extremely difficult to solve. It is necessary to find out a suitable diet in each and every case as individual idiosyncrasies are common. The diets prescribed in the text books are of very little use in our practice; hence it becomes necessary to find out such diet as may be within the reach of the poor and can be easily prepared. To begin with, milk is generally prescribed, but there are certain objections to its use. Being an animal product it gets easily fermented, and the ordinary milk that is sold in the bazar is infected by various micro-organisms and hence unfit to be of any use in such cases. Besides, I have seen that milk disagrees with some persons as it has got a tendency to form gas. To begin with, it must be found out how much and what stuff can be easily digested and hence we should begin with the most easily digestible articles of food, and also to regulate the hours of meals and to give a clear interval of at least six hours between any two meals. It is always advantageous to take the evening meal before sun-set, so that food may be digested before the time

of going to bed. The following are the articles that I use:—

(1) Whey, prepared either by the addition of alum or lemon juice.

(2) Butter-milk, well-skimmed.

(3) Barley water.

(4) Albumin water.

(5) Mutton or chicken soup.

(6) Dal water. Moong dal is preferable.

We may select any of the above according to the requirement of the particular case and when we find that it is digested properly, try to give gradually Sago, Dalia, Khichri—one part of rice and two parts of dal, with very little spices—and bread made from unsifted flour and thus bring the patient to his normal diet, after a period of months or years.

Whenever we find in our course of giving more and more solid food that certain articles disagree, we ought to make a halt and use only those articles which are found agreeing. This form of dietary does not satisfy the craving of the patient for food and whenever he feels hungry in between the prescribed hours—"Moong Ke papad" or half a doz. "monakka"—can be allowed with advantage. Fruits such as oranges, pomegranates and grapes can be used with advantage between the meals whenever possible. Gram flour, ghee & onion

are found not to agree in many cases, hence they should be allowed only in the end. A flannel binder to the abdomen specially after food is required.

COUGH.

BY KAILAS SINGH,

L.C.P. & S.

Bombay.

Cough is a symptom or signal or message which informs us that some branch of the Vagus nerve on the cough centre is being irritated and is, in fact, nature's effort to remove that irritation.

Hence to diagnose the cause of cough it is necessary to know the anatomy of the Vagus nerve. The Vagus nerve is composed of two sets of fibres, one motor and the other sensory.

The motor fibres arise from the cells of the nucleus Ambiguus and the sensory arise from the cells of the Jugular Ganglion and Ganglion Nodosum of the nerve. The nerve filaments unite and form a flat cord which passes beneath the flocculus of the cerebellum to the Jugular foramen, through which it leaves the cranium. Here the Vagus nerve presents an enlargement, the Jugular Ganglion. After its exit from this ganglion it forms a second swelling which is known as Ganglion Nodosum. The nerve passes vertically down the neck within the Carotid sheath lying between the internal

Jugular Vein and Internal Carotid Artery as far as the upper border of the Thyroid Cartilage, and then between the same vein and the common Carotid Artery to the root of the neck. The further course of the nerve differs on the two sides of the body. On the right side it crosses the first portion of the Subclavian Artery, between it and the Right Innominate Vein, and descends by the side of the Trachea to the back of the root of the Lungs, where it spreads and forms the Posterior Pulmonary Plexus. From the lower part of this, two parts descend on the Oesophagus and divide to form with the branches of the left nerve the Oesophageal plexus. Below, these branches are collected into a single cord, which runs on the posterior side of the Oesophagus and enters the abdomen through the Oesophageal opening of the Diaphragm and is distributed to the postero-inferior surface of the Stomach and joins with the Celiac Flexus of the left side and sends filaments to the Splenic Plexus.

On the left side, the nerve enters the Thorax between the left Carotid and Subclavian Arteries behind the Left Innominate Veins. It crosses the left side of the Arch of the Aorta and descends behind the root of the left lung and forms the Posterior Pulmonary Plexus. From here it runs along the anterior surface

of the Oesophagus, where it unites with the branches of the right nerve in the Oesophageal Plexus and is continued to the stomach, distributing branches over its antero-superior surface; some of these extend over the fundus and the others along the lesser curvature. Filaments from these branches enter the Lesser Omentum and join the Hepatic Plexus.

Branches of the Vagus nerve:—

In the Jugular Fossa

(i) Meningeal.

(ii) Auricular.

In the Neck (iii) Pharyngeal.

(iv) Superior Laryngeal.

(v) Rt. Recurrent.

(vi) Sup. Cardiac.

In the Thorax

(vii) Inf. Cardiac.

(viii) Left Recurrent.

(ix) Ant. Bronchial.

(x) Post

(xi) Oesophageal.

In the Abdomen (xii) Gastric.

(xiii) Celiac.

(xiv) Hepatic.

1. A small Meningeal branch, practically of no interest as a cause of cough, may possibly account for vomiting in Meningitis.

2. The ear cough is one of the commonest, where a plug of wax in the Acoustic Meatus may by irritating the filaments of the Auricular (Arnold's) nerve and be responsible for persistent

Cough. Syringing the Acoustic Meatus frequently produces cough, and in children, vomiting is not uncommon, as a result of such procedure; moreover, in people with weak hearts, syringing the ear has been responsible for a sudden fatal syncope, by reflex irritation of the cardiac branches. Another very common example is the persistent Hic-cough which is frequently due to enlarged Bronchial glands in children, the irritation of which is referred to the Superior Laryngeal filaments.

3. Pharyngeal, is frequently the source of cough in cases of Pharyngitis.

4. Superior Laryngeal, internal branch, sensory nerve to the base of the tongue and larynx. External branch, the motor nerve for the action of coughing is the most frequent cause of cough in cases of Acute Catarrhal, Chronic, Oedematous, Spasmodic, Syphilitic or Tuberculous Laryngitis.

5. Recurrent nerve is responsible for cough where there is pressure from an Aneurism or growth on this nerve.

6. Cardiac branches are indirect causes of circulatory failure.

7. Bronchial branches are concerned in cough of Bronchial, Lung and Pleural diseases.

8. Oesophageal branches cause cough which is very rare.

9. Gastric branches cause cough in Gastritis.

10. Hepatic branch may cause cough in certain Liver affections.

The irritation to this nerve may be due to:—

1. Foreign bodies as dust, food, tobacco, smoke, etc.

2. Excess of natural secretion.

3. Pressure.

4. Inflammation.

5. Acute or chronic debility or increased irritability as after Influenza, etc.

The first questions to be put in case of cough are as follows:—

1. "Do you bring anything up?"

2. "What do you bring up?"

Positive answer to the first question shows that the lesion is somewhere in the respiratory tract. Negative answer to the same question does not necessarily exclude the respiratory passage, in all cases.

In cases of cough without expectoration we must follow this routine:—

1. Examine the external ear for wax, Eczema, etc.

2. Examine the throat for signs of inflammation and enquiry should be made as regards smoking, exposure to cold, etc.

3. Examine the chest very carefully for diseases of the heart and early Phthisis.

4. Stomach abnormalities must be brought into consideration and its function and physical condition enquired into and examined.

The following are the important points to be noted in connection with cough:—

1. Expectoration or sputum.

2. Character.

3. Age of the patient.

4. Duration.

5. Time of occurrence.

Sputum.—Naked eye inspection of:—

1. Quantity.

2. Consistency.

3. Whether homogenous or in layers of different appearance.

4. Whether frothy or airless.

5. Colour or transparency.

6. Odour.

Mucous sputum—which is clear, tough and sticky is present in early Bronchitis.

Muco-purulent in many lung diseases. In Tubercle of the lungs especially in advanced cases, we find small, ragged lumps of mucus surrounded by mucus, which are heavier than other constituents since they are airless. They therefore sink to the bottom and become more or less flat or button like. This constitutes the "Nummular Sputum of Phthisis". Actual pus

shows rupture of abscess in the lungs or somewhere in the respiratory tract.

Thin watery serous fluid blood stained indicates œdema of the lungs.

Bloody sputum shows three things:—

1. Pulmonary disease. 2. Cardiac disease and 3. Aneurism.

Characteristic colouration of the sputum:—

1. Rusty and viscid in Pneumonia. 2. Bright yellow or green (Anchovy sauce) in liver Abscess which is ruptured into the lungs. 3. Black in coal miners.

The stink of abscess or gangrene of the lung and of Bronchiectasis is characteristic.

The microscopical examination:—

Tubercle Bacillus if found is the only sure proof of Phthisis. Eosinophil cells, a few Bronchial and Epithelial casts in addition to Curshmann's spirals and Charcot-Leyden crystals are characteristic and sure signs of Asthma.

Character.—In common colds, that is Coryza, the cough is at first short and dry, but as the quantity of the secretion increases, the type becomes more paroxysmal and the fit of coughing continuous till the mucus is expectorated.

2. Recurrent wheezy cough attended with expectoration occurs in Bronchitis.

3. Paroxysms of cough followed by vomiting in children are due to whooping cough or advanced Tubercle of the lungs in adults.
4. Bronchiectasis is attended by paroxysms of cough, fetid expectoration at intervals so also in the case in rupture of Emphysema and Liver Abscess.
5. Persistent hacking cough occurs in throat lesions (Granular Pharyngitis).
6. Irritable, dry, short cough early in the morning and at the time of going to bed occurs in Phthisis.
7. Night cough is generally due to enlarged Uvula and thread worms in children.
8. Long, loud, barking cough is characteristic of Hysteria.
9. Short suppressed associated with Pleurisy or Pleural Pneumonia is so characteristic to be diagnostic in the former, it is attended by expectoration.
10. The glander or brassy cough associated with Aneurism or other mediastinal tumours is typical.
11. The reflex cough is due to:—
 - i. Gastro-intestinal disorders.
 - ii. Pericarditis.
 - iii. Carious teeth.
 - iv. Ear troubles as wax in the ear.
 - v. Some abdominal disease.
12. In Laryngitis the cough is noisy, husky or stridulous.

The age of the patient.—In babies and quite young children the causes of cough are:

- i. Bronchitis.
- ii. Broncho-pneumonia.
- iii. Tubercle.
- iv. Pneumonia.
- v. Whooping cough.

About the middle age, Chronic Bronchial troubles, quiet Pleurisies, Growths, Aneurysms, etc. are common.

Note.—A careful routine examination of the chest is essential.

Duration of cough:—

Cough that has lasted only for a few days, but in that time has become sufficiently severe to cause the patient to seek medical advice, shows something *Acute*. On the other hand cough which has lasted for some months or years and yet seems to the patient uncertain in its causation, is very likely to be due to some obscure chronic conditions.

X-Ray observations sometimes help in determining the cause of cough.

Time of occurrence:—

- i. A cough in the morning only is suggestive of bronchial catarrh with accumulation of secretion during sleep.
- ii. A cough on getting into bed suggests laryngeal irritability or enlarged uvula, but one that wakes the patient's sleep suggests Phthisis.

iii. Cough on exertion suggests weak heart.

Cough and vomiting:—These two complaints are not infrequently made together by patients. One question must always be put. "Are you sick independent of cough or do you cough till you are sick?" "Yes" to the first question suggests stomach troubles and "yes" to the second suggests bronchial trouble or whooping cough.

Treatment:—

Cough as already been stated is a symptom and not a disease. The proper treatment consists in treating the underlying cause. Throat cases are best treated by the following spray.

R| Acid Carbolic 3I
Glycerini Acidi Borici 3IV
Aqua Rosi . . . ad Oz XII Misco.
Cholorate of Potash, Nitrate of Silver, Alum or Tannin may be applied or local sedatives as inhalation of Friar's Balsam or Menthol spray may be utilised. Ear cough may be treated with syringing which will give instant relief.

Carious teeth require removal. Stomach and liver cases require purgation, or sedatives like Bismuth, Codiene, or Hydrocyanic acid.

Hysterical cough should be treated with antispasmodics such as Asafetida or Valerian.

Reflex or spasmodic cough requires Bromides.

Guaiacol may be tried in cases of Pulmonary Tuberculosis.

Sedative expectorants or Stimulant expectorants may be used as the case may require in cough.

The painful cough of Pleural inflammation may be relieved by strapping the chest and administering sedatives.

The barking cough of puberty occurs in overfed or too often fed children, and Sir A. Clarke insisted upon a simple but liberal dietary of three or at most four meals a day, outdoor exercise, and early hours.

Locally, he used Glycerine of Borax with Oxyschloride of Bismuth and Morphia brushed over the whole interior of the throat after each meal and at bed-time.

Internally, he tried syrup of bromide of iron and quinine with small doses of Arsenic. When this failed he gave a pill containing reduced Iron, Valerianate of Zinc, Belladonna and Nucis Vomica pushed till the physiological effects of Belladonna became evident.

ACUTE ABDOMINAL CONDITIONS IN CHILDREN DUE TO ERRORS IN DIET

A large percentage of all cases of gastro-intestinal diseases in children are caused by errors in diet; this is particularly true

is gradually added to the mixture, if the condition has not been due to sugar, in the first place; then a little whole milk is added and in time takes the place of all the fat-free milk. It is well not to add cream to the mixture until the baby has entirely recovered.

In older children cut out all milk for some days, letting clear meat and vegetable soup take its place; follow this by the cereals, green vegetables and light puddings, gradually getting back to the regular diet in from a week to ten days.

As far as drugs are concerned they are of little value, except in occasional cases. The diarrhea is, as a rule, controlled by the cleaning out of the gastro-intestinal tract and the rest which follows. At times the bismuth preparations may be of use, but they are apt to be abused and more often cause harm, particularly if used too early. The same is true of the opium preparations. If there is much fermentation, the *Bacillus bulgaricus* or *Bacillus acidophilus* are of use.

Cyclic or recurrent vomiting is due, I believe, to errors in diet, as it has been found that by testing the child with the food proteins and removing from its diet any food that shows even a partial reaction the case can be cured in a short time; in fact, many cases that have been so

treated have not had any return attack, and two children who were allowed to eat some of the forbidden foods had an attack within three days.

NOTES OF CASES.

I

A Case of Hydramnios

BY G. A. BADHAWAYAKER,
L.M.P.

S. A. S., Garoth.

On the 24th July I was called upon to examine a woman in advanced pregnancy in the afternoon. The woman belonged to a noble and *pardanasin* family and was a multipara. I hurried to the spot and enquired about the case from the husband who told me that his wife had attained a full-term pregnancy and since last fifteen hours was complaining of pains in the back of a vague type.

A native *dai* who was engaged to attend upon her, was called by me and enquired about the nature of the patient's troubles. She was not able to satisfy me, whereupon I asked for the personal examination of the patient and was only allowed to examine her externally.

EXAMINATION.

The abdomen was found extremely enlarged and distended in proportion to a normal pregnant uterus. The veins on the abdomen were turgid and promi-

nent. I tried to palpate it, but it was impossible to do so owing to its extreme distension. On auscultation no fetal heart sounds were heard. The patient was restless. The contractions of the uterus were quite irregular and extremely slow that the woman though a multipara was not able to say whether they were labour pains.

I then sent for my hospital nurse and asked her to give an enema and draw out the urine. The catheter passed and a little urine was drawn out. There was so much distension that an enema of even a pint could hardly be retained and only a very small motion was passed. There was no rise in temperature and the pulse was 80 p.m. The woman did not allow to examine her face, being a *pardanasin*. HISTORY GIVEN BY THE PATIENT.

She complained that she was getting frequent micturition and had always constipation, that her abdomen this time was unduly enlarged and distended when compared to former pregnancies, that she was not feeling any movements of a living child, and that something like solid was felt in the womb pressing upon the Thoracic Viscera causing great difficulty of breathing. These symptoms were more or less present throughout the latter part of pregnancy and she was praying the Almighty for safe deli-

very. She then also told me that since last fifteen hours she was feeling some vague pains in the sacral region.

MY CONCLUSIONS FROM THE SYMPTOMS

As the abdomen was extremely enlarged, distended, and unpalpable, I was led to believe that there must be some fluid or twins in the uterine cavity and because the patient did not feel any movements of the child and no fetal heart sounds heard on auscultation the child must probably be dead. As the patient was complaining of vague labour pains in the back since fifteen hours it might be a case of primary uterine inertia due to some obstruction in the womb; the frequency of urine and motion might be due to pressure symptoms only.

TERMINATION OF THE CASE.

As mentioned above, the labour pains were very feeble and vague and almost felt in the sacral region. There was an interval of about an hour between each contraction. At this time it was quite necessary to make a vaginal examination, but it was not allowed by the patient. Thereupon I thought it better to rely upon the information given by the nurse who said that it was a case of Cephalic presentation but the head was not fixed. The os was scarcely dilated to admit

one or two fingers. All this information showed that it was a case of primary uterine inertia due to some obstruction in the uterus and hence the necessity of stimulating the uterine contractions. Pituitary ext. was not available and ergot could not be safely administered owing to its uncertainty of action. I gave the following prescription.

R|
Quinine Sulph. gr. vii.
Acid Sulphuric dil m x.
Lig Morphia Hydrochol m xv.
Tinct. Nux Vomica m x.
Aqua ad oz. i.
to be taken in one dose.

But to all this and other treatment including hot vaginal douches and massage of the abdomen, the contractions remained as feeble as ever during the next day and night, when all of a sudden, on the 26th morning at 5 A.M., the contractions became rather strong, the bag of membranes ruptured and an excessive quantity of liquor amnii exceeding twenty-five pints drained off. An ill-developed and macerated dead child was taken out by the attending nurse. The uterus was cleared off everything and douched.

In this case the patient remained in labour for more than fifty hours. If any vaginal examinations were allowed, a slight rupturing of membranes at the

proper moment would have reduced the troubles of the patient. However, the patient recovered owing to nature's efforts in expelling the abnormal contents and is doing well in puerperium.

II

An Analysis of 336 Cases of Hydrocele and Haematocoele in which operation for radical cure was performed.

BY MAQBUL ALAM, L.M.P.

*Senior Sub-Assistant Surgeon,
Syriam Municipal Hospital.*

In March, 1912, about three months after this hospital had been in existence, a case of double hydrocele was admitted.

The patient who originally came from Gorakhpur, India, sought relief because of the mechanical inconvenience the condition caused him. Under chloroform the operation for radical cure, the technique of which is described later, was performed. As soon as he was convalescent this patient returned to his native district, much delighted; with the result that since that time patients have come regularly from that district to this hospital for a similar operation.

The technique of the operation, as performed in this hospital, is briefly as follows:—

(a) The patient is prepared in the usual way by a preliminary bath and purgation. The whole

genital area is thoroughly shaved; scrubbed with spirits, soap and water; swabbed with turpentine, followed by rectified spirits, then spirits of iodine, and finally covered with a sterile dressing the night previous to operation.

Next morning an enema is given; and a bath with soap and water. The genital area is again swabbed with turpentine, alcohol and spirits of iodine, and covered with a sterile dressing.

(b) Under chloroform and atropin (grs. 1/100 hypodermically) a small incision is made over the front of the side affected, extending down to the tunica vaginalis, exposing this along the length of the incision. The skin is kept tense during this procedure. The tunica vaginalis is then slit with a pair of sharp pointed scissors, and any free fluid allowed to escape. With the left forefinger inserted into the sac, protecting the testicle and cord, the tunica vaginalis is slit up, and delivered with the testicle through the skin incision. The sac is then everted, and the two outer portions stitched together behind the testicle with four day catgut. It is important that at least three stitches should be inserted at intervals of not more than half an inch. The actual number of stitches required varies with the size of the tunica vaginalis. The reason for this is that, especially in long-standing cases,

the tunica vaginalis is tough, and a single stitch or two is apt to give way and result in a recurrence of the hydrocele.

All bleeding points must be carefully caught, and tied or twisted.

The testicle, with the tunica now everted and firmly stitched in position, is carefully reintroduced into the scrotal sac, care being taken to reintroduce the upper pole first and to exert as little traction or tension as possible and to avoid any twisting of the cord. This procedure obviates much subsequent discomfort and pain. All bleeding from the skin having been checked, the skin incision is carefully closed with silk-worm gut, extra care being taken to have perfect apposition, because the skin is now lax, and as perfect union as possible is desirable. Spirit of iodine is swabbed over the incision, and a sterile dressing applied. Finally a T bandage is applied to support the scrotum and contents.

The patient is kept on his back in bed for seven days, when the skin stitches are removed; and he is not allowed to leave hospital for at least ten days after the operation.

METHOD OF DEALING WITH COMPLICATED CASES.

(a) *Thickened tunica vaginalis.*
—A much thickened tunica vaginalis is sometimes met with. Here

it is necessary either to partially or totally excise the parietal portion, and especially to check all bleeding points before reintroducing the testicle and cord into the scrotum. In all these cases I leave a small gauze drain at the lower end of my incision, leaving one suture to be tied on removal of the drain after 24 hours. If there is no effusion of blood I do not reintroduce the drain but tie the loose suture. If there has been bleeding I reintroduce the drain, and after its final removal allow the wound to granulate.

(b) *Haematocele*.—This is by far the most troublesome condition. There are always abundant adhesions between the two coats of the tunica in addition to the thickening. Infection is especially liable to occur. The parietal layer of the tunica must be more or less entirely excised; the visceral layer is thoroughly scraped, and any organised blood clot removed. It is practically impossible to check all bleeding, so in these cases drainage is necessary. I always introduce a drain through another incision low down behind the affected side of the scrotum. This gives drainage at the most dependent part of the scrotum. I close the anterior incision after checking as much bleeding as possible, and keep the posterior drain in for at least a week, dressing the case once daily.

(c) *Orchitis*.—I have never had a patient develop orchitis subsequent to this operation while in hospital.

(d) *Varicocele*.—I have not seen any cases complicated with varicocele.

(e) *Difficulty in micturition*.—30 per cent. of my cases have had difficulty in micturition for the first 48 hours after operation, but only few cases had to be catheterised. The others were relieved by administration of Imperial drink, local cold or hot applications and small doses of belladonna.

(f) *Hernia*.—I had six cases of associated irreducible hernia with hydrocele. These were all diagnosed before operation, and the hydrocele was treated along with herniotomy. The same routine was followed, the testicle and cord and tunica being pulled up and reintroduced through the incision for herniotomy.

(g) 33 of my cases showed evidence of infection subsequent to operation; ten of these were complicated with haematocele. In all these cases the incisions were enlarged to allow of free drainage, and counter openings made where necessary. Irrigation was performed and all these cases dressed twice daily. Unfortunately one case developed tetanus, and

subsequently died. I believe this infection was due to contaminated catgut. For this reason, since this unfortunate accident I have always personally sterilised the catgut for my own operations. My procedure is as follows:—

Glass jars with close-fitting ground glass covers are sterilised by washing and subsequent thorough boiling.

The catgut is bought in hanks; washed with soft soap and water placed in rectified spirits changed daily, in a sterile glass jar, for at least two days.

The catgut thus treated is transferred at regular periods to a solution consisting of Tincture Iodine (B. P.), 1 part: Spirits Vihi Rect., 10 parts: distilled water, 4 parts; and allowed to remain in this 2-4 days before being used. If the catgut remains in this solution more than one

week it becomes friable and useless. This can be avoided by transferring it back to rectified spirits every 4-5 days.

Since sterilising the catgut myself I have had no infection developing after operation.

The attached table gives a brief summary of my cases. The lesson I draw from these cases is not a new one, but one which will bear repetition: *viz.*, to make the operation as simple as possible; as thorough as possible; and, above all, to avoid leaving any oozing points in the scrotal sac.

I desire to express my grateful appreciation to the Superintendent of the Syriam Municipal Hospital for the facilities afforded me in going through the records of these cases, and for generous help in writing this paper.

Total No. of cases.	AGE.			Nationality and Residence.		Uncomplicated unilateral hydrocele.	Uncomplicated bilateral hydrocele.	Unilateral hæmatocele.	Bilateral hæmatocele.
	Oldest patient.	Youngest patient.	Average age.						
336	55	16	31.	Burmans ...	11	156	136	8	12
				Anglo-Indians ...	5				
				Chulias ...	10				
				Mohammedans ...	76				
				Hindus ...	294				
				(The Indians came largely from Gorakpur district)					

No. of cases infected after operation.	No. of cases found infected at operation.	Average duration in hospital after operation.	No. of recurrences after operation.
33	1	15 days.	4
Pus was present in the serotal sac. No radical cure attempted, but free incisions and drainage. Patient was in bed 25 days. Subsequent cure.			

MEDICAL ITEMS OF INTEREST.

The Nature and Cause of Old Age Enlargement of the Prostate

Kenneth M. Walker (*British Medical Journal*) concludes in reviewing the various theories to account for old-age enlargement that it is impossible to explain it by any theory of chronic inflammation. Although enlargement may reproduce conditions favorable to the development of a neoplasm, the enlargement itself does not come into the category of true tumors. The condition is in the nature of a fibro-epithelial degeneration which finds its analogy in the female in serocystic disease of the breast. This degeneration may be regarded as an accident occurring in the progress of involution of the genital tract. The cause that determines the onset of the condition is unknown, although it is not improbably connected with a loss of endocrine balance during this period. The writer's observations indicate that injections of extract of prostate in the human being do not pro-

duce any response in the way of alteration of blood pressure, respiration, etc. He has used both autolysit and commercial preparations of prostatic extract for this purpose and has never obtained a reaction that could be appreciated clinically. Incidentally, he mentions that he has found that prostatic extract, when employed as a therapeutic measure, is occasionally of use during the early phase of enlargement, but of little benefit in the later. Answers received to a questionnaire inquiring into the incidence of prostatic enlargement in the various countries of the world brings out the fact that prostatic enlargement shows a definite distribution that is anthropological rather than geographical in character. It very rarely occurs among Mongolians or Negroes. Generally speaking, enlargement is commoner among meat eaters and those leading the sedentary lives of cities than among vegetarians and frugal

The Indications for Operation in the Treatment of Injuries Involving the Brain

Donald Munro (*Boston Medical and Surgical Journal*) states that the indications for operation in injuries involving the brain are three: Compound fracture of the skull, depressed fracture of the skull, and a rise in the intracranial cerebrospinal fluid pressure. Patients who have received an injury to the brain do not develop symptoms and do not die from the fracture which may or may not be present in the bones of the head. They do develop symptoms and they do die as a result of the increase in intra-cranial pressure which accompanies the fracture, or which not infrequently is present in the absence of any fracture. The intra-cranial cerebrospinal fluid pressure depends on the relation between the secretory powers of the choroid plexus and the absorptive powers of the cerebral venous circulation. All cases that have received or are suspected of having received an injury to the brain, no matter how slight, should, as soon as they have recovered from their surgical shock, have the pressure of their cerebrospinal fluid measured, and the treatment should be based primarily upon this finding alone. If the intra-cranial pressure is measured, the symptoms and signs, such as pulse,

blood pressure, respiratory rate, and mental state, commonly used as indications governing diagnosis, treatment, and prognosis, need not and should not be regarded in any other light than as confirmatory evidence.

Effects of Faulty Foods on Endocrine Glands

Robert McCarrison (*New York Medical Journal*) observed in feeding experiments in animals that malnutrition, whether rising from complete starvation, from the incomplete starvation due to avitaminosis, or from starvation resulting from deficiency of proteins and calories, gives rise to enlargement of the adrenal glands and sometimes of the pituitary body with an atrophy of all other endocrine structures. The functional perfection of the adrenal glands is dependent upon the balance of the food and the quantity and quality of its vitamins.

Faulty food permits the entrance into the blood of a stream of intestinal bacteria, which, acting on the thyroid, may cause congestion of the organ, desquamation of its acinar cells, and distorting of its normal acinar structure.

It is possible by the examination of the thyroid alone, with but a small percentage of error, to distinguish between those deficiently fed animals that have suffered from septicemic states

in consequence of food faults and those which have not.

Syphilis

Where there is a clinical suspicion of syphilis, but with the blood returning a negative Wassermann, proceed on the assumption of syphilis, at least to the point of giving a dose of salvarsan, or a short course of mercury and iodine. The information gained from a therapeutic test may remove all doubt. It does it more often than we think.

A syphilitic with evidence pointing to cerebrospinal involvement should be protected from worry and unusual mental strain. Also, patients with cerebro-spinal syphilis, as far as possible, should not occupy positions of great responsibility or involving the welfare of others. For instance, no patient of this type should be permitted to serve as an engine driver.

Many syphilitic patients are careless in following instructions as to systematic dosage. This particularly holds good after the disappearance of all lesions. In view of this lack of faithfulness when treatment is put into their own hands, it may be advisable to resort to the intravenous or intramuscular administration of mercury. This secures exactness of dosage and constant supervision of treatment, highly important factors in success in the

treatment of the case.—*Urologic and Cutaneous Review.*

The Hysterical Nature of So-called Pernicious Vomiting of Pregnancy

A. F. Hurst (*The Lancet*) believes that pernicious vomiting of pregnancy is always hysterical. He described a case of a patient under his care which makes it possible to prove with certainty that the case was one which would generally be regarded as of the toxemia class.

Clinically the patient was a typical example of severe pernicious vomiting; she vomited constantly whether she took food or starved, her tongue was dry, her pulse rapid as in any case of toxemia vomiting.

Two days before the writer saw her the ammonia index was 28, nearly three times as high as the point which Whitridge Williams regarded as the danger signal. The urine also contained a very large quantity of diacetic acid. Yet relief followed after half an hour's psychotherapy; the vomiting ceased, the pulse rate fell, the ammonia index dropped to normal for pregnant women, the diacetic acid disappeared from the urine, and the patient gained sixteen pounds in weight in four weeks.

It is obvious from this case that no reliance can in the future be placed either on the clinical or the chemical diagnosis of toxemia vomiting of pregnancy. Per-

sonally, the writer does not believe that such a condition exists apart from eclampsia and acute yellow atrophy.

The high ammonia index and the great excess of diacetic acid in this patient's urine were clearly not caused by toxemia, but were the result of starvation and dehydration.

It is clear, therefore, that the division into the nervous and toxemic classes is fallacious. All cases are nervous, but the term hysterical should be substituted for nervous, as the condition is typically hysterical, caused by suggestions and curable by psychotherapy.

Epidemic Encephalitis

At a meeting of the Queensland Branch of the B.M.A. held on May 25, Dr. D. E. Trumphy, of Ipswich, opened a discussion on the epidemic of encephalitis. He said that he had seen eleven patients with this disease. One was a child aged eleven years and the remaining ten were children under seven. The majority were between three and four years of age. The onset was sudden. The child became irritable and drowsy and convulsions followed. The actual type of the convulsions varied. At times they were generalized; sometimes they consisted of small twitchings of the limbs or face; at other times there were general movements of the limbs. When the convulsive

movements ceased, the muscles of the affected limbs were in a spastic condition. The arms were firmly flexed and the legs were kept in hyper-extension. The spasticity in some instances led to the development of opisthotonus. The pressure of the cerebro-spinal fluid varied considerably, even in the same patient. The fluid withdrawn by lumbar puncture did not contain any abnormal elements. The temperature on admission was high, the average being about 39.5 deg. C. (103 deg. F.). In one patient it had risen to 43 deg. C. (109.4 deg. F.) before death and after death it had risen beyond the highest degree marked on the thermometer. Treatment had been symptomatic. One child had recovered. In this instance the diagnosis had been in doubt. The majority of the patients had died within thirty-six hours of admission to hospital.

Dr. J. A. Cameron, of Ipswich, related his observation of two patients. The first was a girl of ten years who had run a splinter into her foot. The splinter had been removed and an injection of anti-tetanic serum had been given. Three hours later she had had high fever and she had become drowsy and convulsions had taken place. The parents had naturally blamed the serum. The child had died in eighteen

hours. The second patient, a child aged four years, had become ill with fever and gradually increasing drowsiness. The convulsions had at first been confined to one arm and one leg. Then the other side had become implicated and tetanic spasms had developed. The spasms had been ushered in by a scream and all the limbs had become contracted. The drowsiness had lasted for seven days. The fever and the convulsive attacks had gradually lessened. The child was taking notice of objects at the time of the meeting. It was very limp and its muscles flaccid. There was no residual paresis, though foot-drop had been noticed at first.

Dr. M. S. Patterson, of Ipswich, stated that he had carried out a *post mortem* examination of one patient. He had not found any obvious pathological lesions. On the vertex of the brain over the motor area were many small nodules. He had sent a specimen to Dr. Daling who would report on it at the next meeting.

Dr. T. H. R. Mathewson referred to a typewritten *resume* of the cases which had occurred in patients at the Hospital for Sick Children, Brisbane. He also referred to an article by himself and Dr. Oliver Latham entitled "Acute Encephalitis of Unknown Origin," which had been published in THE MEDICAL JOURNAL

OF AUSTRALIA (October 27, 1917, pages 352 to 357). He considered that the present epidemic was identical with that of 1917. He agreed with Crookshank, who had stated in the course of a discussion on epidemic encephalitis, held at the Royal Society of Medicine in October, 1918, that they were dealing with a disease which for years had been associated with epidemics of myelitis, polio-myelitis, mes-encephalitis and influenza. Dr. Mathewson wished to amplify this by including polio-encephalitis in the term polio-myelitis. Crookshank had pointed out that there had been a change of type, but there had also arisen a change in their conception of disease. They were apt to regard a new conception of a disease as a new disease. Particular diseases were conceptual, but they were associated in the minds of medical practitioners with various signs and symptoms. Crookshank had stated further that no one would claim that the epidemic that had occurred shortly before the date of the discussion at the Royal Society of Medicine was one of polio-myelitis, although it was chiefly one of polio-encephalo-myelitis. But he did claim that epidemic encephalitis and epidemic polio-myelitis were made of the same material and formed part of the same suit. The observed differ-

ence, one entirely quantitative and not specific, did not warrant the belief in two different diseases. It was perfectly compatible with what Wickham had said concerning the protean nature of Heine-Medin disease. It was not a case of discovering or observing a new disease, but of re-arranging or extending their conceptions of an old one, namely, Heine-Medin disease.

OUR GRIEVANCES

IN U. P.

Extract from G.O. No. 127 V-135, dated the 4th March, 1921, Medical Department, to the Inspector-General of Civil Hospitals, United Provinces:—

I am directed to refer to your letter No. 5492, dated the 26th June, 1920, forwarding a copy of the resolutions passed at the fourth Conference of the Provincial Branch of the All-India Sub-Assistant Surgeons' Association, held on the 29th and 30th November, 1920, together with a copy of an address presented to you by the representative of the Association on the 26th March, 1920, and in reply to state as follows:—

* * * *

3. To deal now with the remaining request of the Association generally in the order in which they are mentioned in your letter

(1) Government agrees with you that it is not the business of

a Sub-committee of the Association to visit Medical Institutions with a view to making suggestions for improving the education imparted at the Agra Medical School. No such visits should be permitted.

(2) As regards the request that L.M.P.'s who have been attached for five years to any Government Hospital or Dispensary subsequent to obtaining their Diplomas may be considered as having completed the proposed fifth year of training for the L.S.M. Diploma and permitted to sit directly for the L.S.M. examination, I am to say that Government agrees with you that this is a subject for consideration by the State Board of Medical examinations. I am to request, therefore, that the matter may be brought before the United Provinces Medical examinations for consideration and framing, if necessary, of the rules referred to in the concluding portion of paragraph 2 of your letter.

(3) No action is necessary, as stated in paragraph 3 of your letter, on the suggestion that the functions of the Medical Colleges and Schools should not be extended to recruiting for the provincial services. As observed by you, the Lucknow Medical College and the Agra Medical School have no concern with the recruitment of passed students into the Government Service.

(4) In regard to the request for an alteration in the designation of the Members of the Provincial Medical Services, I am to say that the Government of India have had this point brought to their notice in the report of the Medical Service Committee. This Government proposes to await the orders of the Government of India in the matter.

(5) The suggestions that persons possessing the L.M.P. qualification may be granted the franchise and allotted seats in the Local and Imperial Legislative Councils cannot be accepted. The franchise has already been fixed, and seats allotted under the electoral rules, which have been approved by Parliament. These rules cannot be altered by the Provincial or Imperial Legislatures.

(6) As regards the Association's representation in the matter of the institution of separate public health qualifications for men of the Assistant Surgeons' and Sub-Assistant Surgeons' classes, I am to refer you to Government Order No. 35[C., dated 8th July, 1920, to the address of the President, State Board of Medical Examinations, in which Govt. approved the Institution of separate qualifications after considering the views of the Association.

* * *

(8) As regards the next request of the Association *viz.*, that L.M.P.'s may be appointed as outside examiners to conduct the examinations at the Agra Medical School, Government agrees with you that the State Board of Medical Examinations should not have its discretion fettered in the matter of selection of examiners.

(9) Government also agrees with you—

(a) that the suggestion to limit the period of deputation to Military duty is an impossible one, and,

(b) that no rules are necessary defining precisely the duties of Sub-Assistant Surgeons in sub-charge of District Hospitals. It is obvious that Civil Surgeons must be allowed a free hand in the distribution of Hospital work.

(10) Government accepts your views as regards the replacement of Sub-Assistant Surgeons by Assistant Surgeons at large and important Dispensaries and further agrees that no modification is necessary in the rule authorising the appointment as Honorary Surgeons and Physicians to Hospitals of only those Medical Practitioners who hold a recognized Diploma not lower than the L.S.M. Diploma.

(11) As regards the request that Female Sub-Assistant Sur-

geons may be placed on an equality with Male Sub-Assistant Surgeons in the matter of status, pay and condition of salaries, I am to request that it may be pointed out to the Association that as these Sub-Assistant Surgeons are not Government Servants but employees of the Countess of Dufferin Fund Association, the matter is one for consideration of the Provincial Branch of that Association. The Association may also be informed that the Dufferin Fund Association have recently prescribed for Female Sub-Assistant Surgeons the scale of pay allowed to Male Sub-Assistant Surgeons in the employment of this Government.

(12) As regards the request for revision of the scale of Local and special allowances drawn by Sub-Assistant Surgeons, I am to say that this question has been postponed for consideration until a decision has been reached as to the revision of the ordinary salaries of these officers. The question of allowances can most suitably be considered after that decision has been taken.

(13) With regard to the request that the temporary services of certain Sub-Assistant Surgeons before confirmation should be counted towards grade promotion, a reference is invited to the correspondence ending with G.O. No. 465[V-133, dated the

23rd December, 1920. No further action can be taken in this matter.

(14) Government sees no sufficient reasons to adopt the suggestions of the Association that transfers, promotions, and the grant of leave to Sub-Assistant Surgeons should be published in the Local Government Gazette and that their names should be included in the Civil List of this Province.

(15) Government is also unable to accept the next request dealt with in your letter, *viz.*, the giving to Sub-Assistant Surgeons on Military duty in India of promotion to the next higher grade without examination. As pointed out by you, Sub-Assistant Surgeons on Military duty cannot expect the same concessions as were allowed to Sub-Assistant Surgeons who undertook liability for general or field-work. In this connection I am to observe that in paragraph 11 of the address presented to you, the Sub-Assistant Surgeons complain of not having been granted extra remunerations while on Military duty in India, nor other privileges which were granted to other subjects of His Majesty while on Military service. As regards this I am to say that the Sub-Assistant Surgeons accepted the terms offered by the Military department for service in India

and this being so, they have no reasonable grievance.

(16) Government agrees with you that no action is necessary as regards the suggestions that poisons used in Pharmacy should not be freely sold to non-qualified Druggists and men. The suggested prohibition seems to be neither practicable or desirable.

(17) The request of the Association for the appointment of Sub-Assistant Surgeons as Deputy Superintendents of Lunatic Asylums and of Compounders to Jail and Canal Dispensaries are under separate consideration of the Government and orders thereon will be communicated to you in due course.

4. I am to request that unless necessary, you will communicate the decision conveyed in this letter to the Provincial Branch of the Association.

No. 3916/Appointment Department, dated Lucknow 13th April, 1921.

Copy forwarded to the Secretary, All-India Sub-Assistant Surgeons' Association, U.P. Branch, for information.

(Sd.) J. K. CLOSE, M.D., Col.,
I.M.S.,

Inspector-General of Civil
Hospitals, U.P.

CORRESPONDENCE.

Diet in Typhoid

SIR,—I was only waiting for one or two cases of Typhoid more to write to you about my having treated them with 'Solid Diet'; but I could not get any as yet. In the meanwhile I came across your Editorial on "Typhoid" in the *Indian Medical Journal*, and am now tempted to send you for publication particulars of the four cases I treated with our routine Chlorine Mix. with solid diet.

The first case I got on 13th May 1921, was a Hindu male of 25 years of age. I gave him Chlorine Mix. and told him to take milk only; but he did not do so and took nothing for 24 hours. The next day I went to him, and he told me that year before last when he got this sort of disease, he was treated by a *Vaid* who gave him "Bajri Ka Dalya" (*Bajri* is the staple food of this place) with his other medicines and that he (the patient) got well. I refused him this food strictly and gave the usual instructions to use milk and liquid diet only. But he kept on taking that "Bajri Ka Dalya" stealthily with my medicine. He got well after three weeks and told me what he had been doing. This surprised me, and I decided to try the same thing with the next case.

The second case I got, on 26th September 1921, was a

'Bhat' of 16 years of age. I treated him with Chlorine Mix. and a few other medicines for the trifling symptoms as usual. For food I prescribed him "Bajri Ka Dalya", "Kitchri" and "Thuli" (pounded wheat). He got well within the reasonable time without any extra untoward symptoms.

The third case I got on 28th September 1921. He was a Hindu male of 28 years of age. He was treated like the second case and got well as usual.

When these three cases were treated with this good result, I called the two local *Vaids* of this place, to enquire about the diets which they generally give to such patients. They told me that 'Bajri' is an essential thing in their treatment of such cases. It must be boiled well and seasoned with salt. It should not be very solid or quite liquid.

Another surprising information he gave me was that they give dried "Ladoos" to such patients and that these are very useful adjuvants. Such "Ladoos" are specially dried and preserved for Typhoid patients.

I got my fourth case on the 13th February 1922. She was a female of 15 years. I could not dare to give her the above-mentioned "Ladoo" as I had not the experience of it. I only treated her with my usual diet mentioned above and she recovered.

Now I am thinking of watching a few cases, in which dry "Ladoos" are prescribed, and shall let you know of the results.
... BASANTI LALL MATHUR, L.M.P.
Nohar, Bikanir.

S. A. Surgeons with M. C. P. & S. Qualifications.

SIR,—I propose to describe below the condition of the Sub-Assistant Surgeons with M.C.P. & S. qualifications and other Sub-Assistant Surgeons in general as regards the distribution of the posts of Assistant Surgeons. The old G.R. of 20 years' meritorious service for promotion to the Assistant Surgeons' rank is a dead letter and up till now only two Sub-Assistant Surgeons (Drs. Awari and Naidu) from the Bombay Presidency are taken as Assistant Surgeons. It is requested that liberal promotions be given from the Sub-Assistant Surgeons to the class of Assistant Surgeons (at the rate of 10 per cent.) This has been long expected, but nothing has come out of it as yet. Now that several Sub-Assistant Surgeons with M.C.P. & S. qualification and having put in more than 10 to 15 years' service are decaying in the Department, it will be in the fitness of the things to promote these qualified persons as soon as possible, considering the pecuniary loss and the waste of energy they had to undergo for passing

the M.C.P. & S. Examination. It is presumed that the posts of Registrars are meant to give some practical knowledge to the Assistant Surgeons before they are given independent and responsible charges. Here it may be suggested that it is only the raw M.B. & B.S. Assistant Surgeons who require this sort of training at the Civil Hospitals and not the M.C.P. & S. Assistant Surgeons who are already in service for many years and who have worked for good many years at big Hospitals under competent I.M.S. Officers.

I would also suggest that there should be a competitive examination for the posts of Assistant Surgeons (as is the case for the I.M.S. posts from among the M.Ds, M.Bs., F.R.C.Ss., etc.), from among the M.B. & B.S. and M.C.P. & S. candidates and those who score more number of marks should only be selected.

If the above is not approved I may suggest that the vacancies of Assistant Surgeons may be filled up in some proportion, e.g., out of five, two M.B. & B.S., two M.C.P. & S. and one S.A.S. with meritorious services.

K. M. HIRANANDANI.
Hyderabad, Sind.

OUR ACTIVITIES.

Aligarh.—The following Address was presented to Lt.-Col.

H. W. Illius, C.I.E., F.R.C.S., I.M.S., Civil Surgeon and Patron of the All-India Sub-Assistant Surgeons' Association, Aligarh Branch, by the members of the Branch:—

SIR,—We, the members of the All-India Sub-Assistant Surgeons' Association, Aligarh Branch, have assembled here to-day with feelings of deep regret and great sorrow to bid you farewell on the occasion of your transfer to Benares. It may be a better station for you, but we really feel your separation very much. We can never forget your genuine courtesy, your ever ready sympathy, your great learning and surgical skill. The friendly treatment you accorded us and the general public, your noble nature and your great qualities of head and heart have endeared you to every man you came in contact with. Permit us, Sir, to enumerate some of the manifold acts of kindness towards your subordinates in the Medical profession in particular and the Medical Association in general.

The Surgical and Medical works done at the Sadar Hospital, during the tenure of your office, has been of very high quality. Your presence shed cheerfulness and was a comfort to the patients. You have improved the District Hospital and the branch dispensaries by allowing them one agathi and charcoal for sterilizing the dressings, which is of the

utmost importance in the present days of Aseptic Age. You provided the outdoor department of the District Hospital with a new improved operation table, water boiler, and one kettle sterilizer and instrument tables. This improvement will long be remembered with your name. You have supplied Birdwoods Practical Bazar Medicines to all the dispensaries. This will materially help in giving an impetus to all the Medical officers, to learn country drugs. You presided over our monthly meetings in spite of your hard and onerous official duties. We can never forget your serenity of temper and your loving treatment. You have been good enough to allow the Sub-Assistant Surgeons in Sub-Medical charge to perform the Medico-legal examinations. Your noble aim was to educate and train your subordinates and they will always remember your zeal with feelings of mingled respect and gratitude.

Once more, Sir, permit us to tender our tribute of respect to your noble character and high qualities, and gratefulness for all that you have done for us.

We wish you happy and prosperous days.

Baroda.—Meeting held in the State General Hospital, Baroda, at 5-30 P.M., on 10th September 1922. Mr. A. H. Joshi presided and five members were present.

A short note on "Points to be observed in general in treating cases of Pneumonia", was read by Mr. D. F. Shah.

Resolved that a deputation consisting of five or six members of the Branch to be hereafter named should wait upon the Chief Medical Officer to place before him certain matters affecting the class.

Dacca.—The third annual sitting of Dacca Branch of the All-India Sub-Assistant Surgeons' Association took place on the 2nd September, 1922, at 5 P.M., at the Dacca Medical School premises. Lt.-Col. Mackelvey, C.I.E., I.M.S., Superintendent of the Medical School, presided over the meeting. Twenty-four members were present.

The following resolutions were carried unanimously:—

1. That the present system of inspection of sub-divisional and other mofussil dispensaries in the district to which Government Sub-Assistant Surgeons are attached should be modified as far as practicable as this system prevents the Civil Surgeon from coming in direct contact with the medical incumbent in charge.

2. That the present teaching allowance of a medical school given to the demonstrators is quite inadequate in view of the enormous increase in accommodation and work. It should be brought to the notice of the

authorities for immediate revision and increase. Similar increase has been given to the sister branch of the Department on the same ground. The various charge allowances of Jail, Police, Railways, etc., should also be increased.

The following scientific papers were read at the meeting, and lively discussions took place on the same:—

(1) "Intravenous injection of Iodine on Sepsis" by Mr. N. C. Bhattacharjea.

(2) "Antimony treatment in Kala azar", with a few clinical notes and cases, by Mr. K. P. Chakravarty.

Finally, Lt.-Col. Mackelvey very kindly expressed his sympathy for the improvement of the Association. Rai Sahib G. N. Sen on behalf of the members of the Branch Association thanked Lt.-Col. Mackelvey, C.I.E., I.M.S., for kindly attending and presiding over the meeting.

Darjeeling.—At a meeting held on 5th August, 1922, of all the Sub-Assistant Surgeons of this town under the Chairmanship of Lt.-Col. J. B. Christian, I.M.S., the Civil Surgeon of Darjeeling, it was decided to open a Branch Association in this district. Lt.-Col. J. B. Christian, I.M.S., has kindly given his consent to become our Patron. The following gentlemen have been appointed office-bearers for the year 1922:—

President.—S. M. Das (Assistant Surgeon, Retired).

Vice-President and Treasurer.—Ongden, S.A.S.

Secretary.—Yen Singh, S.A.S.

Resolved (1) That all the S.A.S.'s. of this district be requested to enlist themselves as members of this Association.

(2) That a monthly subscription of Re. 1 be fixed for each member.

(3) That the meeting of the Association be held once a month.

(4) That a copy of the proceedings of the meeting be forwarded to the General Secretary.

Mr. K. N. Das read a paper on "Relapsing Fever."

NOTES AND COMMENTS.

We are very glad to learn that Rai Bahadur Sarjoprasad, General Secretary, The All-India Sub-Assistant Surgeons' Association, has been appointed as State Surgeon and Inspector-General of Jails, Indore; and we hasten to convey our hearty congratulations to him on this well-merited recognition.

"Notes on Vaccination in the United Provinces of Agra and Oudh for the year ending 31st March 1922" is an interesting document, giving, as usual, details of the vaccine operations performed during the year. We find that 12,08,733 persons were

vaccinated during the year as against 13,47,474 in the preceding year, indicating a decrease of 138,741. The number of vaccination operations performed in 1921-22 also, we are told, exhibited a considerable falling off (136,992) as compared with 1920-21. So far as the decrease during the year under report is concerned, it is attributed "mainly to the spirit of non-co-operation and ignorance of the benefits of vaccination amongst the people, which obstructed vaccination work in many districts."

The Seventeenth Annual Conference of the All-India Sub Assistant Surgeons' Association.

The Seventeenth Annual Conference of the All-India Sub-Assist-

ant Surgeons' Association, will be held at Indore on the 18th, 19th and 20th December, 1922, under the presidency of Rao Bahadur Dr. P. R. Bhandarkar, B.A., L.M. & S., Dewan-i-Khas Bahadur, Home Minister in charge of Medicine and Sanitation to the Government of H.H. The Maharaja Holkar, Indore.

It is proposed to have a Medical, Sanitary, Scientific and Indigenous Drugs Exhibition also in connection with the Conference.

We hope that all our members will co-operate in making these functions a success.

We appeal also to other members of the Profession and to the various bodies interested in Sanitary, Scientific, Indigenous Drugs, Child Welfare and other schemes to lend their helping hand in furthering the objects of the Exhibition.

ANNOUNCEMENT.

We regret that, owing to some unavoidable circumstances referred to already in a previous issue, there has been some delay in the publication of the last few issues of **The Indian Medical Journal**. With a view to make the publication current as early as possible, we are now constrained to publish some issues with reduced number of pages, for which we crave the indulgence of our readers; and we beg to announce that, after the publication is made current, due amends would be made for this reduction.

D. V. VENKAPPA,
Editor.

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THE Indian Medical Journal

A Monthly Magazine devoted to Medicine,
Surgery, Public Health, etc.

Published by the All-India Sub-Assistant Surgeons' Association.

EDITED BY D. V. VENKAPPA.

Vol. XVI]

OCTOBER, 1922.

[No. 10.]

PLACES OF PUBLIC ENTERTAINMENT.

The large increase in the number of Theatres, Cinema Halls and other places of public entertainment once again brings to the fore the question of public health in relation to these pleasure haunts. Is it not the duty of the authorities to exercise greater control over those who run these shows in order that the health of the people who resort to them is not impaired? Are all these play-houses constructed in strict accordance with the principles of Hygiene? Are the necessary sanitary requirements met inside the buildings? Have effective restrictions been made with regard to the hours of shows? A careful consideration of these and other questions will reveal a state of affairs which, to say the least of it, can hardly reflect credit on those who are responsible for safeguarding public health. Even in countries where very effective measures have already been adopted in these respects the feeling is strong that further improvements are urgently necessary. The defects of the existing arrangements—defects, by the bye, which, when compared to what obtain in India, are trivial—are being exposed and suggestions put forth for greater efficiency have been secured.

It is a well-known fact that the most common danger that Theatre-goers have to face is the liability to contract Influenza and other diseases spread by droplets of secretion from the nose and throat, from those who are suffering from them. But this is not all. "If the building is badly ventilated a cold in the head or Bronchitis may result; a headache will almost certainly follow and the effects of an evening's relaxation will be tiredness and irritability instead of improved health and strength. One must also consider injury to health as a result of exposure to inclement weather in a queue; the danger to life if exits are insufficient and fire should break out, and, in the case of picturedromes, eye-strain." Several means have been suggested to avoid these dangers. Among the most sensible of these suggestions may be classed those made recently by Dr. W. Allan Daley, M.D., B.A., B.Sc., D.P.H., Medical Officer of Health, Blackburn. With regard to the prevention of infectious diseases, Dr. Daley is of opinion that children in arms should not be admitted to places of public entertainment, because, if measles or whooping cough are contracted at an early age, a fatal termination is not unlikely. In grave epidemics of Influenza, he adds, it is a matter for serious consideration whether or not all places of entertainment should not be closed: at least, there should be long intervals between the performances. So far as the sanitary requirements in the auditoriums are concerned, Dr. Daley is of opinion that on each floor of the auditorium sanitary conveniences for each sex should be available. They should be efficiently ventilated, and, if possible, separated from the main building by ventilated passages. There should be one water closet for each sex and one urinal stall for every 450, or less, persons for whom accommodation is provided. Dr. Daley, again, lays stress on the importance of efficient ventilation and points out that definite standards must be laid down. "A standard of floor space usually adopted is that of the London County Council, viz., $5\frac{1}{2}$ sq. ft., per person where backs and arms are provided to the seats and $4\frac{1}{2}$ sq. ft. where they are not: this is exclusive of the space in corridors and at the sides." Where natural ventilation is not possible by open doors and windows, hopper ventilators must be fitted into the walls or into the shutters. The inlets should be large, so that the velocity of the air through them will be small. They should be some six feet above the floor, and the flow of air should be directed upwards. For satisfactory ventilation, powerful extraction fans are also necessary, which must be

silent and kept on throughout the performance. As the feeling of comfort or discomfort in a room depends on the cooling power of the air, a definite standard should be adopted for measuring this cooling power; and Dr. Daley suggests the use of Professor Leonard Hill's Kata-thermometer. "The mean of a series of five readings is taken and is divided into the 'constant' obtained for each thermometer by experiment: the higher the quotient, which is the cooling power (in milli-calories per second per centimetre of surface), the better are the atmospheric conditions: this reading is called the dry Kata-reading. The experiments are repeated with a moistened piece of muslin over the bulb of the thermometer, and the result is called the wet Kata-reading. Professor Hill recommends that the minimum standards of efficient ventilation should be 6 for the dry Kata and 18 for the wet."

With regard to disinfectants, Dr. Daley refers to a volatile disinfectant recently put on the market; this disinfectant is placed in an electrically heated container, and it is claimed that it will destroy pathogenic bacteria at a distance of many feet and is non-irritating to the audience. Dr. Daley says that if a really non-irritating, but potent, gaseous disinfectant could be obtained, it

would be highly useful. The best disinfectant, however, is sunshine, and if the rays of the sun could be allowed to enter every part of a theatre or picturedrome daily, little else in the way of disinfection would be necessary. So far as eye-strain in picture-dromes is concerned, it must be remembered that in adults when the eye is no longer growing, the danger of damage is not so great as in the case of children. A Committee of experts representing Ophthalmic Surgeons, the Cinema Industry and the Illuminating Engineering Society have been investigating this subject and have come to the conclusion that the principal cause of eye-strain is prolonged looking upwards at the pictures at too acute an angle, and that another important cause is, observing the pictures from a point so far to the side that the picture is somewhat out of focus. The Committee, therefore,—subject to a reservation by the representatives of the Cinema Industry,—recommended: (1) "That the angle of elevation, subtended at the eye of any person seated in the front-row, by the length of the vertical line dropped from the centre of the top edge of the picture to the horizontal plane passing through the observer's eye shall not exceed 35 deg., the height of the eye above the floor level being assumed to be 3 ft. 6 in. (2) That,

provided recommendation (1) is complied with, the angle between the vertical plane containing the observer's eye and the remote end of the upper edge of the picture, should not be less than 25 deg."

Bad focussing, "flicker", film defects either scratches or worn sprocket holes, movement of the picture owing to instability of the projection apparatus and rapid screening of the pictures have all been pointed out as causes of eye strain, which ought to be rectified. An average rate of projection of 1,000 ft. of film in fifteen minutes is declared to be most suitable for eyes.

These suggestions speak for themselves. If such improvements are deemed urgent in countries like England, how much more urgent, and how much greater in scope, must be the improvements that are necessary in India where the existing rules regulating the issuing of licenses to those responsible for places of public entertainments are utterly inadequate to serve the purpose, and where even these rules are very often flagrantly violated! The whole question, in our opinion, deserves the earnest, careful, and urgent attention of the authorities; and we hope that, in the interests of public health, some definite steps will soon be taken.

SMALLPOX, VACCINATION, AND VACCINE LYMPH DEPOTS.

BY K. ANANTAMURTY, M.R.S.I.
(LOND.)

Jaya Arogya Hospital, Lashkar.

The havoc done by Small-pox is well-known to the world. Small-pox is one of the earliest diseases known to humanity. It has killed more men than any other disease. Even the last European War has not swallowed up more human beings than Small-pox.

The origin of Small-pox is involved in much obscurity. It is yet unknown whether it originated in the East or in the West. Every country in the world has suffered from this scourge for a very long time. Its geographical distribution is ubiquitous. The main epidemic and endemic centres are, however, tropical. India is one of the worst countries that have suffered from Small-pox. Its germ has not been discovered yet. But Klein says that it is a bacillus called *Albus Variolæ*. It is a small rod shaped non-mobile bacillus, which does not liquefy gelatin, and is stained by gram. People were dreadfully afraid of this particular disease. They had learnt by bitter experience that one attack would either kill a man or make him immune to any further attack. So, they were

not for marrying before they recovered from an attack of Small-pox. Under the impression that an attack of Small-pox was quite inevitable for everyone, they were anxious to meet this demon and become freed, and, therefore, used to go voluntarily to Small-pox-infected areas and got themselves inoculated by mixing with a person, suffering from Small-pox and by artificial inoculation from the patient's serum.

Small-pox is an aerial infectious disease and can act over considerable distance and so, it is no wonder that those mixing with the patient got the disease. The method of artificial Small-pox inoculation was practised in many parts of India. This was a very dangerous method. It gave intense local reaction, produced secondary vesicles in large numbers; was infectious to others and proved fatal in some cases. This method was as bad as the natural attack. People were disfigured after recovery and deaths were not infrequent. Still, it had some good effects, in general. This attracted the attention of the medical men. They began to find out some remedy for the good of humanity. Among them was Edward Jenner; and thanks to him, after much trouble, observation and investigation, it was found out that cowherds were immune to Small-pox generally. Then he began to inspect milking

cows. He found out a similar kind of pocks on the teats and udders of the cows, resembling Small-pox. The milkers of these cows were particularly free from this Small-pox attack. Then he named this disease of cows, *vaccinia* or cow-pox. He inoculated a servant from the cow-pox lymph and then allowed him to move freely with persons suffering from Small-pox and found the man immune to this dreadful disease. He made this known to the world in 1798. He sent some lymph to Bombay on an East India man. As that ship was wrecked, the lymph could not reach Bombay. He afterwards sent some lymph on silk threads, and that reached Bombay. From Bombay, the vaccination work of India began. Now we see innumerable vaccinators busy all over the world and there are many excellent vaccine lymph depots. India has got her lymph depots in several places. Humanity is very much indebted to the discoverer of this method of protection against the attack of Small-pox.

Small-pox has an incubation period of 12 days, period of infectivity six weeks and quarantine 16 days. The microbes are contained in the secretions of the nose, mouth and air passage as well as the contents of the pocks. They are given off most freely when these latter dry and scab,

diffusing themselves to great distances in the form of a fine dust. These micro-organisms, have a great resisting power. Symptoms of this disease are as below:—(1) There will be symptoms of headache and pain in the lumbar region. (2) The temperature rises and attains a maximum on the second day. (3) On the third day the eruptions appear consisting of hard, shotty papules, first seen on the forehead and face, then on hands, wrists, ankles and feet; and later on over the whole body. (4) By the fifth day of the eruption the papules have all become vesicular, accompanied by some subcutaneous œdema. None of the vesicles are oval and they do not collapse when pricked. (5) By the eighth or the ninth day of the eruption the vesicles become pustular, and there is a secondary rise of temperature due to pyogenic infection. (6) This disease is most prevalent in the spring and winter; and all ages are liable though it is rare after fifty. The preventive measures are isolation of the patient, disinfection of the room, clothes and the discharges of the patient; vaccination and notification of the disease as soon as it breaks out.

To-day, an individual can protect himself in three ways:—(1) Recovery after a natural attack, (2) Small-pox serum inoculation, and (3) Vaccination. The last is the best and the safest method.

I have already touched upon the harms resulting from the other methods. Let me discuss the merits and demerits of vaccination:—(1) It diminishes the liability to be attacked by the disease. (2) It modifies the character of the disease and renders it (a) less fatal (b) of a milder or less severe type. (3) The protection it affords against attacks of the disease is the greatest, during the years immediately succeeding the operation of vaccination. The protection generally covers a period of ten years. (4) When the protective potency decreases, re-vaccination is quite essential. (5) Germany and other countries where vaccination and re-vaccination are compulsory are quite free from this disease.

Some raise the objection that many injurious effects result from vaccination. They say that Pneumonia, Syphilis, skin-diseases, Diphtheria, Whooping Cough, etc., are caused by vaccination. After thorough investigation medical authorities and the Royal Commission on Vaccination have come to the conclusion that the objections are unjust and groundless. Some precautions to guard against the ill-effects, if any, are:—(1) The children should be inoculated with the lymph of calves only. (2) The age period should be extended to six months from the

date of birth. (3) The children should be vaccinated at their own houses. (4) The lymph should be preserved in tubes only. (5) The instruments used must be well sterilized.

What is Vaccination? It is the method by means of which a susceptible person is protected from an attack of Small-pox, by giving him cow-pox. How should vaccination be done? (1) The arm should be cleaned well with soap and water. Antiseptic lotions may also be used. Weak solution of Boric or Carbolic answers the purpose. Rewash the arm with sterile water. (2) Make five punctures of half a square inch, each at a distance of half an inch from each other, with a sterilized lancet, well charged with vaccine lymph. It is better to make three marks on the right arm and two on the left. (3) Sterilize the lancet after each operation. (4) Do not scratch too deep. (5) Take care that your hands are quite clean before vaccinating.

What should one do after getting vaccinated? (1) The vaccinated part should be allowed to dry thoroughly before covering it. (2) The drying may be facilitated by fanning, but the part should not be exposed to the direct rays of the sun. (3) The vaccinated part should neither be washed nor scratched; for the washing will remove the lymph

and scratching gives rise to secondary vesicles. (4) One may take a bath daily but the vaccinated part should not be rubbed. (5) One may have plenty of fresh air. (6) Persons suffering from skin diseases should not approach the vaccinated persons. (7) The vaccinated part must be kept quite clean. (8) Medical advice should be sought after eight days; nothing should be applied to the vaccinated parts without medical advice. In India, people use the paste of neem leaves and water, which should be avoided.

What should be done if a child becomes sick after vaccination? (1) If the child is feverish give Castor oil, Magnesia or Jalap. (2) If the arm be much inflamed use tepid lead lotion or vaseline. (3) For ulcerations of the vesicles use zinc oxide ointment, Ichthyol ointment or a weak solution of Picric acid in Alcohol. (4) For Erysipelas treat as usual.

What should be the state of the person to be vaccinated? Children are the greatest sufferers from vaccination and so the babies should be vaccinated within six months after their birth. The child should be free from any acute disease or chronic disease known to interfere with the regular course of vaccine vesicles i.e., Diarrhœa, etc.

tion of the vagina. It is very simple, but yet many a man fails to recognise it. Vulva is swollen. Mere rise in the pulse may be due to nervous causes.

5. If the second stage persists more than two hours with 1 and 2 vertex presentations.

6. Premature rupture of the membranes. Because 1½ amnii escapes and progress is always delayed.

7. Rigid perineum.

8. Haematoma of the vulva, tumours and other mechanical obstructions.

9. Eclampsia.

10. Others. Heart disease, kidney and other specific fevers as Typhoid, etc.

Malpositions on the part of the mother and child—

1. Contracted pelvis and large head.

2. Contracted pelvis.

3. Obliquity of uterus.

4. Large head.

5. Locked twins.

6. Pre with hand and head.

7. Mento anterior.

8. Unreduced occipito posterior.

9. Brow presentation.

10. After coming head of breech.

11. Face with chin anterior.

Before the application of forceps see that the following are fulfilled—

1. That os is fully dilated.

2. The head should be at least engaged with its largest circumference in the brim.

3. The Bladder should be empty.

4. Rectum must be unloaded.

5. Membranes should be ruptured.

6. Head should be in a suitable position. Naegeles, Tritzmans obliquity of the uterus or mento post position of the face are not good cases for the application of forceps.

7. See that vagina is not septic.

8. Above all, see that the child is alive. More than once it has occurred that forceps are applied in cases where foetus has been long dead. As to whether foetus is dead or alive can invariably be determined by listening to the foetal heart.

CONGENITAL PORPHYRINURIA.

BY PROF. SIR ARCHIBALD GARROD, K.C.M.G., F.R.S.

Summary.

The excretion of red urine, rich in a pigment of the hæmatorporphyrin group, is a well-known phenomenon. In some cases patients who have taken sulphonal, or an allied drug, for longer or shorter periods, pass such urine, and exhibit acute toxic symptoms; in others, acute porphyrinuria occurs independently of the taking of such drugs. In cases of a more chro-

nic kind the excretion of such urine is associated with the summer eruption called hydroa æstivale, an association which was first described by McCall Anderson in 1898. In 1911 Hans Gunther pointed out the existence of a group of cases in which the porphyrinuria is congenital, and such cases have occurred in several members of a family. This anomaly, which is one of the inborn errors of metabolism, is very rare, and not more than fifteen cases have been described hitherto. The patients are for the most part males; almost all have been subject to annual attacks of hydroa æstivale, which causes extensive scarring of the skin of the exposed parts, and mutilations of the ears and nose. The bones become deeply stained by infiltration of porphyrin, and the teeth also may be pigmented, as in a case recently described by L. Mackey and the lecturer.

Hans Fischer has shown that the porphyrins of the urine and fæces of such patients differ widely in composition from each other and from artificial hæmatorporphyrin, although the three pigments show spectra which are almost identical, but for slight differences in the positions of the absorption bands.

Hausmann and others have shown that the porphyrins, like

certain other fluorescent substances, possess a remarkable photo-sensitising power. Mice injected with these pigments become highly sensitive to light, and according to the dose of porphyrin injected, and the amount of exposure to light, show acute toxic symptoms, or necrosis of the snout and ears and loss of hair. Meyer Betz, by a similar experiment upon himself, proved that the sensitising effect of hæmatorporphyrin is also manifested in human subjects.

This is obviously the cause of the association of hydroa with porphyrinuria, and Fischer found that, of the natural pigments, the stercoporphyrin of the fæces has the greater photo-sensitising power, whereas the uro-porphyrin is the more toxic.

In some cases both the urinary and cutaneous symptoms appear to develop under the influence of light. This presents a difficulty which is not yet fully explained. It may be that in such cases exposure to light changes the chromogen of the pigment, which has not the photo-sensitising power, to the porphyrin which has that power. Some observations of Perutz lend support to this hypothesis.

It is most desirable that any fresh cases which present themselves from time to time, should be investigated in the light of our present knowledge.

**FASHIONABLE
MIDWIFERY.***

BY J. KYNASTON COUCH, M.D.,
Gynaecologist, Out-Patients'
Department, Perth Hospital;
Physician, King Edward
Maternity Hospital, Perth.

Some years ago I had the honour of addressing this Branch on a subject entitled "Axis Traction Forceps *versus* Telephone and Motor-Cars." The theme that ran through this paper was: "Go home and return when sent for, but do not use forceps."

I was appointed to King Edward Maternity Hospital upon its foundation six years ago and there I have put into practice the views I then held and still hold with gratifying success.

The midwifery world has recently received a few shocks in procedure, hence my desire to bring before your notice some methods of "fashionable midwifery" and compare them with those we practise in our hospital.

A few years ago an obstetrician in Edinburgh said he used forceps in 75 per cent. of his cases. Now, another conjurer has appeared on the scene and last year his paper created a great stir in America. He, in twelve months, delivered 1,113 women, 920 by version, 400 being primi.

* Read at a meeting of the Western Australian Branch of the British Medical Association on June 21, 1942.

para and 520 multipara. In addition to the 920 versions, there were eighty abdominal Cæsarean sections, *i.e.*, one in fourteen, two vaginal hysterotomies, thirty-five breech cases and thirty-nine instrument deliveries. He had forty-one still -births. He thinks complications due to the cord are the prolific cause of still-births. Only two mothers died after version. I should like to know how he avoids prolapse and expression of the cord in such a number of versions. A description of this meddlesome practitioner's method of version is as follows :

The patient is fully anesthetized and in the cross-bed dorsal position. The left hand is used without reference to the position of the child. During delivery the legs are allowed to drop into a modified Walcher's position. The cervix must be either dilated or easily dilatable; the membranes are ruptured and the arm acts as a plug to prevent the liquor running away. Both feet are pulled down to the vulva. The body is expelled by uterine action.

When this paper was read by a prominent obstetrician, it was met with the strongest opposition. Just imagine a one in fourteen Caesarean section rate! Years ago a practitioner in Perth turned every child, provided it waited for him to take his coat off. This man had a big run of sepsis, as it was in the pre-glove days.

1922.]

FASHIONABLE MIDWIFERY.

Now Dr. De Lee, one of the foremost obstetricians in the world, whilst running down Potter, uses forceps in every case as soon as the head comes down on the perineum, does a paravaginal section, waits five minutes, expresses the placenta into his hand and give more morphine.

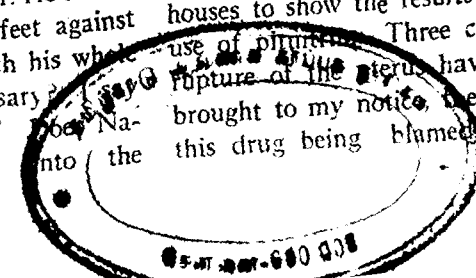
Now, having considered the operations let us consider the result on the babies. Holland, of London a few years ago made a *post mortem* examination on 168 still-born babies. He found that 50 per cent. had died from intracranial injuries, either from lacerations of the brain or hæmorrhage into the membranes. Have you heard the cephalic cry of the new-born babe when you are visiting a private hospital? In a day or two you will probably be told the child died from convulsions. The doctor with a conscience knows the cause of those convulsions.

I found, when using Milne-Murray axis traction forceps, that it was considerably safer not to screw them up when extracting. Consider for a moment the manner in which forceps is frequently used by the practitioner. He stands or sits and puts his feet against the bed and pulls with his whole weight. Is this necessary? **No!** For Nature shoot children into the

world at the rate they are pulled out by some practitioners? If you use forceps, imitate Nature's way; if you can.

I consider "twilight sleep" to be one of the greatest blessings introduced into midwifery of recent years. Of the different preparations we have used at King Edward Hospital, we find "Omnopon" the most satisfactory. The patient is placed in a darkened and quiet room. We use the memory test to find out the effect of the drugs and never use morphine if the patient is near the end of her labour, thus avoiding the risk of having a blue baby. I have seen many women who have not the slightest recollection of the baby having been born.

With regard to the use of pituitrin, it appears at times to be the most wonderful drug and at others it has not the slightest effect. The same thing occurred when we gave morphine to quieten the pains in the "pre-twilight" days, which enabled the practitioner to go to bed. Then the woman would have two pains and the child was born before the doctor could wipe his hypodermic needle. I know that wonderful charts are shown at drug houses to show the results of the use of pituitrin. Three cases of rupture of the uterus have been brought to my notice, the use of this drug being blamed for it.



Upon inquiry, however, I have found that an operation, such as version or a high forceps, had been done. Pituitrin should only be used when the *os uteri* is dilated and the roadway clear.

INDUCTION OF LABOUR.

I have seen labour induced at the seventh month by a senior practitioner owing to the patient being only fifteen years of age. I have yet to see a case of difficult labour in a patient of this age. I have had much difficulty in bringing on labour in eclampsia by bougies. There is no doubt in my mind that the induction of labour, although at the time it may be satisfactory, has a large percentage of sepsis and its sequelæ to its credit.

CARE OF THE PERINEUM.

There are three methods of protecting the perineum: (i.) By leaving it alone. (ii.) By operative interference. (iii.) By supporting the perineum.

I cannot endorse the late Mr. Lawson Tait's remark that when he was young he supported the perineum and when he was old it supported him.

Even to save the perineum, the keen, energetic operating practitioner is not content in doing an episiotomy; he wants to do a Shuchard's para-vaginal section. Do you think this necessary? Sew up a perineum when it ruptures

by all means, but wait for it to rupture first.

THE THIRD STAGE.

Much harm is done by the premature squeezing and massage of the uterus to get the placenta away. All the books teach us to place our hand on the fundus as soon as the child is born and to hold it there, to see if it becomes over-distended with blood, but why, may I ask? The retroplacental hæmatoma must form before the uterus can expel the placenta, therefore it is bound to rise by its normal mechanism. Leave the fundus absolutely alone for twenty minutes is my teaching and ascertain if the placenta is in the lower uterine zone or in the vagina before you attempt to express it. Even in such an operation as ordinary expression, how many practitioners take the trouble to ascertain where the placenta is before they attempt to express it? Even here the enthusiastic practitioner must meddle and inject the umbilical vein with warm saline solution, as suggested by Sklavounis. If this were constantly done, I feel sure, we should meet with many cases of embolism. When the placenta has left the uterus or is in its lower zone, a combination of expression and gentle traction on the cord is quite safe, but keep your hand out of the vagina!

ABDOMINAL AND VAGINAL EXAMINATION.

Instead of the "four grips" method of the Rotunda, I use a combined bimanual examination in cases where I have been unable to find out all I want to by the "grips." There is one method of dividing the fundus into four quadrants and finding out in what direction the feet point, but the method I recommend is to make a vaginal examination first, then do a "Munro-Kerr," with the thumb over the *symphysis pubis*, in order to ascertain the amount of overlie of the parietals. With the left hand make a bimanual examination of the head and feel for the jaw, to find out the amount of flexion. Now feel for the buttocks with your left hand. You will have a wonderful revelation of the lie and presentation of the unborn child. So much do I value and appreciate this method that I prefer it to pelvimetry and leave a woman with every confidence as to the prognosis. Try it and you will appreciate it! When I demonstrate to a class of nurses, I frequently use the "grips" and "Munro-Kerr" with my thumb without any vaginal examination.

PELVIMETRY.

I used to carry a pelvimeter, but I usually do all this work in my ante-natal examination. At the bedside, I hold my first

fingers on each anterior spine and measure between them for the interspinous diameter and my palms are held over each crest for the intercrystal diameters. I find I get results equal to my "Duncan" or "Skutsch" pelvimeters.

ABORTIONS.

I very frequently refuse to curette at the Perth Hospital. If a woman has miscarried, she is told the most alarming stories of the danger of blood poisoning if she is not curetted. Unless there is hæmorrhage, I really cannot understand why an abortion should require curettage. A high temperature may cause her attendant to suggest curettage, but in this instance more than in any other, the less you interfere the better; the risk of causing a septicæmia is very great. I am confident that no woman can have a septic abortion or an abortion accompanied with fever unless she has had passed an instrument or its equivalent, the septic finger of her attendant.

In a septic abortion, do not touch it until the temperature has been down seven days! Allow it to decompose and break away and perhaps be expelled, but do not touch it with a curette! I repeat, do not use an instrument in a miscarriage unless there is a hæmorrhage! I have never regretted leaving one alone, but have regretted interfering.

SEPTICAEMIA.

How much safer is the work of the obstetrician when the head is on the perineum than when it is above the brim or just engaged. As long as the forceps are kept in the vagina, sepsis is rare, but once you pass the blades inside the cervix the element of danger sets in, the germs lying in the lower part of the vagina being carried in. The amnion protects the uterus in the same way that a towel protects the skin round a wound. Hence the danger when the hand is put inside the uterus, but outside the membranes, when the danger is increased a hundred-fold.

One reason why the nurses at King Edward Hospital get such good results is that they never dress wounds. Why should a man dress a whitlow and then extract a placenta in the same half hour! Even with gloves, he cannot put them on unaided without contaminating them. Is every case of midwifery to be turned into a surgical operation with its risks? A few years ago I was taken very much to task when I made the statement that the attendance of a practitioner at a birth frequently turned a normal labour into an abnormal one. How is it possible for men with large general practices, with long lists of visits and consultations, actually to attend or even to supervise an ordi-

nary case of labour? I am only repeating a general statement in the medical papers of recent years when I say that it means that the general practitioner will be compelled to do one of the following: (i.) Refuse midwifery or (ii.) simply superintend and allow the nurse to do the actual work.

In this actual work I include ante-natal observation, urine testing, blood pressure, determination of the size of the passage and the relative size of the passenger. During the last fifteen years I have seen at the Perth Hospital a large number of cases of septicaemia, the majority of which I say are due to meddling and unwarranted midwifery. This last year I have seen three cases of fistula caused by operative interference in normal pelves. When a woman with her fourth child is torn in all directions, with pus pouring out from a large wound by the side of the bladder, there is something seriously wrong in the State of Denmark. Why any interference should have taken place, excepting to save the practitioner's time, I do not know. Only a few years ago a patient with septicaemia was sent in to be curetted ten days after delivery. She was too ill to be done and at the *post mortem* examination pus was found in the chest and abdomen. I have had many patients with sepsis who have

lasted from one to three or four months with temperatures of 40 deg. C. and 40.5 deg. C. (104 deg. F. and 105 deg. F.) for weeks. Some have left the hospital with the loss of a joint and a state of permanent ill-health.

The main line of treatment is one of absolute inactivity as far as any local treatment is concerned and yet no patient is ever admitted to the Perth Hospital unless she has been scraped, curetted and washed by the practitioner. It is many years since I did any operation on a patient with sepsis. Previously I have done such operations, including the tying of veins, hysterectomy and so forth, but I find my present results are infinitely better. I treated an old man, seventy years of age, with a carbuncle on his neck 12.5 centimetres (five inches) in diameter on the same lines; applied dry gauze, but made no incision or excision and applied no disinfectants. The man did perfectly well. If we could be persuaded to treat our male patients with septicaemia (known as gonorrhoea) by masterful inactivity I am sure we should get infinitely better results than by all this excessive local treatment. I believe the results in this "Cinderella" of the medical specialities are much worse than they were when

I began practice. Is there a branch of medicine so badly taught as that of midwifery? I feel sure that in the future the bulk of midwifery will be done by highly trained midwifery nurses.

RESULTS OF EXPECTANT

TREATMENT.

During the last twelve months at the King Edward Memorial Hospital, where the bulk of the work is done by the matron, sisters and nursing staff, we had 580 patients. Dr. Clement and I, being the honorary medical officers, are only called down in any untoward cases or accidents.

In these 580 cases we only used forceps on eight occasions. We had fourteen persistent occipito-posterior (all the mothers and infants survived) and two face presentations with the same results, although no forceps were used, nine twins, eight cases of eclampsia and eighteen breech presentations.

Only two Caesarean sections were performed, that is, 1 in 290 as against 1 in 14 of Potter's series. The usual proportion of hæmorrhages occurred. We had no cases of sepsis and no deaths from any cause.

Well, gentlemen, when you hear such a record as this, what is the occasion for following in the footsteps of Potter or De Lee?

In six years we have only had five cases of sepsis, with one death, in 2,500 cases and had ninety-one still-births, including twenty-six macerated fetuses.

Please note that we get a large number of emergency cases of hæmorrhage, eclampsia, etc.

I trust these words of mine may be appreciated. Once more I repeat: practice antenatal supervision use "twilight sleep" and employ a good, patient nurse!

You can by abdominal and vaginal examination in 95 per cent. of cases know from the onset how the case will proceed and when in doubt you can put it through the test of labour. Is the midwifery of the future to be obstetrical surgery, surgical obstetrics or scientific obstetrics?

Leave to Nature her own method of driving out an ordinary-sized passenger through an ordinary sized passage!

THE CONDUCT OF THE THIRD STAGE OF LABOUR.

BY SAMUEL F. GORDON, M.D.,
1326 Rockland Street,
Philadelphia, Pa., Demonstrator
of Obstetrics, Medical School
of Temple University,
Philadelphia, Pa.

The danger due to accidents occurring during the interval between the birth of the child and

the birth of the after-birth exceed those to which the parturient woman is subjected because of accidents during the rest of labor. The immediate dangers of postpartum hemorrhage are evident to all, but there is also an increased liability to infection when the resistance of the patient has been lowered by excessive bleeding. Toxemia, hemorrhage, and even infection may depend upon the incomplete expulsion of the placenta.

It is my purpose to consider how the third stage of labor may be guided, or aided, should assistance be needed, and to report some abnormalities met during the past three years in private practice.

MECHANISM OF PLACENTAL SEPARATION.

It is interesting to note that there has been little real observation of the mechanism of the separation of the after-birth. The mechanisms of Schultze and Duncan described in the textbooks are based on the position of the placenta as found in the lower segment of the uterus and when discharged from the vagina. It is taught that the placenta is separated by the repeated contraction and retraction of the uterus, with diminution of the placental site, five to thirty minutes being required for the separation. It may separate at

the periphery especially at the lower edge, or at the centre with the formation of a retroplacental clot.

Franz, in 1916, investigated the method of placental separation and expulsion by manual examination of the interior of the uterus immediately after the birth of the child. Our clinical observations support his views, and we believe the Roentgen-ray studies of Weibel and Warnekros support them. Franz found: As a rule, the entire maternal surface of the placenta is separated at the same time by one uterine contraction; birth of the body and extremities by a uterine contraction is accompanied by complete separation of the placenta, otherwise several contractions are necessary; complete separation with formation of a retroplacental clot is the rule; partial separation makes necessary several contractions to complete the detachment; attempts at expression of an incompletely detached placenta increase blood loss, while early expression decreases blood loss when the placenta is completely detached.

Our clinical experience at the Samaritan Hospital, in the service of Dr. J. O. Arnold, with the use of pituitrin administered intramuscularly immediately after the birth of the child's head, corroborates the observations of Franz Ryder, and more recently

Brodhead and Langrock, show the lessened blood loss when pituitrin is used at the beginning of the third stage of labor. The latter mention the occurrence of hour-glass contraction in a number of their cases. This has not been noticed in this clinic since we began giving it intramuscularly before the birth of the body. Attempts to express the placenta before the rise of the uterus indicating the passage of placenta into the lower uterine segment are, we believe, the cause of this anomaly.

The views of Franz have been questioned by Frankl and Hiess, who stress the importance of retroplacental hemorrhage in the separation of the placenta. The reported success of Gabaston's method of causing artificial detachment of the placenta, would support their contention. Gabaston, in cases of adherent placenta, injects at least five hundred c.c. of salt solution into the umbilical vein. This swells the villi, rupturing some, and causes a retroplacental hydroma. At the Samaritan Hospital we have not found use for this method, and, in the author's cases where manual extraction was necessary, it could not have been employed.

CONDUCT OF THE THIRD STAGE.

The preparation for the third stage of labor begins at the onset of labor. Indeed, it requires

not only that the patient be carried through her labor with greatest conservation of her physical and mental energy, but that she be brought up to her confinement in the best condition possible, so that she will be as fully prepared for the stress and strain she must undergo.

We conduct the third stage of labor in the following manner: As the head of the child is born, 1 c.c. of obstetric pituitrin is injected intramuscularly into the outer side of the thigh. It acts quickly and, after forceps operations, prevents delay in the delivery of the shoulders by overcoming the sluggish condition of the uterine musculature often present when an anesthetic has been used. We also believe that it aids complete separation of the placenta and its rapid expulsion into the lower uterine segment or vagina.

After the child is born, a clean towel is placed beneath the patient. The patient should now be on her back. A sterile basin, pushed against the perineum, collects all the blood lost, and receives the placenta and membranes as they are expelled. An assistant meanwhile has followed the uterus with a hand lightly laid on the fundus.

If there is no hemorrhage, or undue relaxation of the uterus, nothing is done until there is

evidence that the placenta has passed into the lower uterine segment. Should the uterus balloon up, gentle rubbing of the uterine body is done, the uterus being held by the hand with the thumb in front and the four fingers behind. It is necessary to warn against rough manipulations of the uterus. Abnormal separation of the placenta, shock and increased bleedings are caused in this way.

Efforts to complete the delivery of the after-birth before it has been expelled from the fundus are avoided. We wait for the rise of the fundus, and note its change in shape from a globular mass to one flattened from front to back, and that it is smaller and harder.

At this time, in normal cases, the woman is asked to bear down. I have found Baer's suggestion to grasp the recti and draw them together during a pain, while the woman bears down, useful at this time. More often the patient, if a primipara, is under the anesthetic. In these cases and where the above method fails, we practise early expression of the placenta. The uterus, for this purpose, must be firmly contracted. It is grasped in the hand with the thumb in front and the fingers behind, without squeezing, and is pressed down in the direction of the

birth canal. The fundus is used only to press against the placenta lying in the lower uterus and vagina.

As the placenta emerges from the vagina it is allowed to drop into the basin, dragging the membranes after it. If there is any adhesion of the membranes they are grasped close to the vulva with a hemostat and removed as carefully as possible.

Ergot is now given in 1 c.c. dose of a sterile solution, by intramuscular injection.

Unless the woman bleeds there is no danger in leaving the secundines in the uterus for a day or more. This is rarely practicable and, in the patient's home, dangerous without constant attendance. Our practice is to try simple expression several times, during an hour or more, before attempting a Crede, which differs from a simple expression in that the uterus is squeezed forcibly by the hand as it is pushed in the direction of the inlet. Our experience is that attempts to do a Crede without anesthesia sometimes cause great shock to the patient, and when done to stop bleeding, due to a partially detached placenta, often increases the hemorrhage.

If there is excessive bleeding and the placenta is not readily expelled there should be no

hesitation in entering the uterus with the hand and manually removing the placenta. The author in his work keeps ready additional sterile gloves to be used for this purpose should it become necessary.

One should be familiar with the various anomalies of the placenta and the methods of examining that organ for defects. Now is the time best suited to remove any fragment of placenta that may be retained.

ABNORMALITIES IN THE DELIVERY OF THE PLACENTA.

Abnormalities in the separation of the placenta may be due to faulty uterine contractions, either natural or due to the accoucher's manipulations. Incarceration behind an abnormal contraction ring, or behind a prematurely closed cervix are examples of this. Inflammatory changes in the decidua may cause adhesion of placenta or membranes. Penetration of the deeper uterine wall by placental or chorionic villi; abnormalities of the uterine wall, such as fibroids; peculiarities of placental formation and implantation, such as placenta circumvallata and membranacea; and accessory placentae are among the causes of abnormalities in the delivery of the secundines. It must be remembered that true adhesion is rare. The placenta

that is slow in being delivered is usually merely retained in the lower uterine segment.

CASE PRESENTATIONS.

The following summarized cases are illustrative of some of the above conditions.

1. *Placenta Circumvallata*.—February 28, 1920, I manually removed a placenta circumvallata from a primipara aged twenty years, who had been delivered after a normal labor of eighteen hours, without cervical or perineal lacerations. After the usual attempts to deliver the placenta by expression, pituitrin, and Crede during two hours, she was allowed to rest for several hours since there was no hemorrhage. The placenta was fully adherent in the right cornu.

2. *Adhesion to Fibroid*.—In August, 1921, I was called to deliver a patient for Dr. Adolph Ruff. She was a multipara who had no history of difficulty in her previous labors. A fetus in transverse presentation was delivered by podalic version. There was sharp hemorrhage, which was controlled by massage of the uterus, but which recurred when the uterus relaxed. Manual separation of a partially adherent placenta was accomplished in what at first felt like a bicornuate uterus. The condition proved to be a submucous

fibroid about three inches in diameter, to which the placenta was adherent over part of its surface. The placenta was partly atrophied over the area of adhesion. Growth of the tumor had probably occurred after the placenta had developed.

3. *Adherent Polypus of Chorion Near Placenta*.—On December 4, 1921, I delivered a tripara, aged thirty-two years, of a seven-pound child after a dry labor of six hours. With the head at the outlet, seven minims of pituitrin were given to stimulate the uterine contractions which had lessened in force. After delivery of the child she was given seven more minims of pituitrin. There was a steady oozing of blood, which was only partially controlled by massage. An ampoule of pituitrin was given during the next hour, and during the following half-hour two Crede expressions were tried. These nearly caused syncope and were not further employed. Manual exploration showed adhesion of an atrophied chorionic mass close to the upper edge of the placenta.

These patients made uneventful afebrile recoveries.

4. A patient, a primipara, aged thirty-five years, was under the care of another physician, who called me to give the anesthetic for a forceps delivery,

after thirteen hours' labor, during which she had received four injections of pituitrin. After delivery there was considerable hemorrhage. The bleeding could not be controlled by massage of the uterus. In spite of urgings to remove the placenta manually, he continued his efforts to massage the uterus and in pulling on the cord, tore it off at its insertion into the placenta. Only when the patient was moribund would he recognize her serious condition. The patient died. The fear of entering the uterus had been so instilled into him that he waited too long.

NOTES OF CASES.

Misuse of Salvarsan (606).

BY L. D. KHATRI, M.B.B.S.
(BOMBAY.)

*Bacteriologist, Laboratory Gorow,
Dera Ismail Khan.*

I was doing bacteriological work in the Laboratory Gorow's India, at Dera-Ismail-Khan, when a case was sent to me by a local practitioner with the following notes:

"Six Intravenous Injections of Neo-Salvarsan have been tried on this case, but with no effect. The sore on the penis is in the same state rather worse. I am at a loss to understand what to do for him."

The patient was educated, and came to me with the complaint that he got Syphilis and was very anxious to get cured com-

pletely and speedily at any cost. I took him into my private room and began going into the case. He gave no history of impure contact lately. Duration was two months only. Locally on the dorsum of the prepuce, there was an ulcer of about an eight anna piece; margins cleanly cut; surface covered with slight serous discharge; base soft. I thought it to be a soft sore, but the words of my teacher reminded me of the mistakes generally committed in the diagnoses of ulcer on the penis, and so I followed the case systematically.

The following classifications, I think, will keep the young Medical Practitioners on guard against mistakes:

1. Hunterian Chancre
2. Soft
3. Traumatic Ulcer.
4. Herpes.
5. Eczematous Ulcer.
6. Epitheliomatous Ulcer.
7. Tubercular Ulcer (very rare).

(a) It was not hard chancre as the base was soft and there was no history of impure contact. No spirochetes were detected after staining by Burries Ink method. Here I emphasize the importance of the use of microscope to my professional brothers.

(b) It was not Traumatic Ulcer as there was no history of Trauma.

(c) It was not Herpes, as there was no pain of neuralgic type and no history of being preceded by vesicles.

(d) It was not Epitheliomatous, as the man was of twenty-five years of age and the situation was against it.

(e) It was not Tubercular Ulcer, as there was no primary focus and no history of tubercle.

Now the diagnosis remains between soft sore and eczema. I excluded soft sore as there was no history of impure contact. Duration being two months ulcer would have spread far and wide and produced sores when no local treatment was resorted to. Luckily I found three patches of eczema on the inner side of the groins and asked the patient whether this Ulcer was preceded by such a patch, which caused itching; after getting positive reply I diagnosed the case as Eczematous Ulcer. My diagnosis was confirmed therapeutically as the Ulcer yielded to ordinary treatment of Eczema, i.e., Lotio Plumbi wash and the following powder dusted:

R| Boric Acid.
Calamina Prep.
Zinc Oxide
Amylum.

And the case was completely cured within a week uninterruptedly.

No doubt, Salvarsan is a boon to the syphilitics, but its misuse in such cases comes in the way of its well-earned reputation through the world. In fine, I advise my brethren to attach the greatest importance to differential diagnosis of ulcer on penis and preserve the reputation of Salvarsan.

II

A Case of Sciatica.

BY MANGHANMAL, S. H.

*Demonstrator, Medical School,
Hyderabad, Sindh.*

Camphor in olive oil injections near the site of sciatic nerve has been tried by me in one of the very obstinate cases of Sciatica where all other remedies had failed. The method is as follows:—

Three c.c. of camphor in olive oil to be injected near the site of the nerve on the first day and then go on adding one c.c. to the previous dose and injecting every alternate day, until 8 c.c.s. are used at one time. The improvement is observed after the third injection. Complete cure is obtained by sixth injection, by the end of which time the patient is able to move out freely as though he had no trouble with him.

I wish my professional brethren would try this and give their experience regarding this injection.

MEDICAL ITEMS OF INTEREST.

Otosclerosis with a Possible Bearing on the Etiology of the Disease. By Richard Lake, London (*Proc. Roy. Soc. Med.*, February, 1922).—Lake describes three cases of undoubted otosclerosis, in which he removed septic foci, giving the results as they affected the hearing. In the first case, diseased tonsils were removed. This was followed by a marked improvement on the hearing. Later, the hearing deteriorated, and further search revealed antral disease and dental caries. These conditions were dealt with, but the desired effect on the hearing was not attained. In the second and the third cases, unhealthy tonsils were enucleated, and the hearing was much improved. In the following discussion, members agreed that the removal of septic foci was one of the few methods of treatment of this disease likely to bring about amelioration of the condition.—GAVIN YOUNG.

The Influence of Oral Sepsis on the Course of Cancer in the Throat. By Dan Mackenzie, London (*Journal of Laryngology*, May, 1922).—The writer refers in this note to cancerous ulcers in the pharynx and œsophagus, and not to such growths in the glottic region, as the latter are not exposed to direct infection by the buccal secretions.

The onset of sepsis in these cases is well seen after an application of diathermy. After this operation there is a temporary amelioration in the appearance of the growth. After the sloughs separate there follows a period of quiescence, in which the surface of the ulcer is pale and indolent, and pain on deglutition is much lessened. Sooner or later the signs of inflammation re-appear, sometimes quite suddenly, and the growth once more begins to make rapid advances.

What has taken place is that the diathermy has sterilised the growth, but sepsis has been supplied and the cancerous growth at once shows its vulnerability to the infection. The writer noted that there was a group of cases which preserved the condition of asepsis after diathermy, much longer than other cases, and he hit on the fact that the patients in this class were edentulous. He suggests that the first step in the treatment of these malignant cases should be the removal of all the teeth, to give the diathermy treatment full opportunity of exercising its benefits.—GAVIN YOUNG.

Experimental Inoculation of Human Throats With Virulent Diphtheria Bacilli.

Guthrie, Marshall and Bull (*Johns Hopkins Hosp.*, Dec., 1921)—Diphtheria bacilli obtained from the throat of an other-

wise healthy carrier, and proven to be virulent for guinea pigs, were inoculated into the throats of eight volunteers. Four of the eight had previously given a positive Schick test and all four developed clinical diphtheria. The other four gave negative Schick tests and none developed the disease after inoculation.

All of those inoculated with the exception of one who had given a negative Schick test became carriers.

The authors have found that the administration of antitoxin does not always prevent the carrier state. They also believe that the guinea pig test can be relied upon to estimate the virulence of diphtheria bacilli.

Diphtheria bacilli of a virulent type in the throats of otherwise healthy carriers can produce clinical diphtheria in susceptible individuals.

Infections of the Heart.

CAREY F. COOMBS (*Quarterly Journal of Medicine*, January, 1922) reports certain investigations in connexion with streptococcal infections of the heart and rheumatic carditis. He describes nodules occurring in the interstitial tissue of the heart in acute rheumatic carditis of children. These nodules are mainly composed of fibrin, leucocytes, plasma cells and large globular or fusiform cells. He regards these globular or fusiform cells as charac-

teristic of rheumatic infections. The nodules occurred in eighteen of twenty-six children's hearts examined; they were not found in adults and were not present in the hearts of patients who died of other infections. Foci similar in essentials to those found in rheumatic carditis were found in the pericardium, endocardium, joints and nodules (subcutaneous) of rheumatic patients. The heart lesions in rheumatic carditis suggest a bacterial infection and many authors have described streptococci found in the lesions. Coombs states that streptococci were found in three of his patients. He considers that the tonsils are the most probable focus of infection. Twenty hearts from patients who had suffered from endocardial ulceration, were examined, in addition to the rheumatic hearts, and the incidence of the lesions was found to be on the valves. The remainder of the heart was little affected and what affection there was appeared to be mainly vascular (embolic or thrombotic). These two findings are contrary to those in rheumatic cases, where the heart wall itself is the site of the most serious lesions. A series of ten rabbits was inoculated with streptococci from various sources and it was found that when lesions occurred they were mainly endocardial inflamma-

tion and necrosis and myocardial lesions of vascular origin. The author notes certain similarities in the nature of the lesions in rheumatic and ulcerative endocarditis. He suggests that ulcerative endocarditis is caused by massive doses of streptococci obtaining entrance to the blood stream, causing lesions similar to those produced by intravenous inoculation of animals. He further suggests that rheumatic carditis is due to the entrance of small doses of streptococci over a limited period, causing a general carditis, with specific nodules present in the lesions.

Gastroptosis.

P. C. COURAN (*Quarterly Journal of Medicine*, January, 1922) writes on subject of dropping of the stomach. He discusses the aetiology, X-ray appearances, symptoms, complications and treatment of the condition. The article is based on the study of 684 patients, all of whom complained of symptoms suggesting derangement of the alimentary canal and all of whom were examined under X-rays for this reason. Of these patients, 150 showed a gastric shadow, the bottom of which appeared about ten centimetres below a line joining the highest points of the iliac crests. Other diseases besides gastroptosis were present in fifty patients and the highest incidence of gastroptosis was in those

suffering from pulmonary tuberculosis and arthritis. The condition was three times as common in women as in men and occurred generally in thin people. The symptoms of half the patients were said to have dated from some acute illness. The commonest symptoms were constipation, abdominal discomfort, flatulence, loss of energy, headache, depression, insomnia, anorexia and emaciation. Hypotonus and delay in emptying of the stomach and ileal stasis were commonly found at the radiological examination. Hyperacidity of the gastric contents, low blood pressure and anæmia were common. Treatment consists in the relief of constipation, rest in bed with the foot of the bed raised until symptoms are relieved and there is substantial increase in weight. This requires at least two months. The patient then gradually resumes the normal mode of life. Special attention must be paid to preventing constipation and mild exercise is recommended. Abdominal belts are only useful if the patient cannot undertake the above treatment and are also of service in some elderly people with general visceroptosis. Whenever an abdominal belt is worn, however, a barium meal should be given with the belt in position, to ascertain whether it is serving the purpose for which it is intended.

OUR GRIEVANCES.**AND THE VARIOUS STEPS
TOWARDS THE REDRESS OF
THE SAME.**

Copy of Army Instructions (India), No. 536, dated the 4th July, 1922.

Revision of the pay and conditions of service of Sub-Assistant Surgeons of the Indian Medical Department.

With reference to Army Instructions (India), No. 1436 of 1918, No. 530 of 1919, it has been decided, with the approval of the Right Hon'ble the Secretary of State for India, that, in place of the existing classes* and pay, the following classification with the revised rate of pay as shown against each shall be introduced with effect from the 28th April 1922.

Classification.	Revised rate of pay per mensem.
Warrant Officers ...	Rs. 70/-
Jemadars ...	Rs. 75-5-145.
Subedars ...	Rs. 160-5-175.
Subedar Majors ...	Rs. 200/- plus Rs. 50/- personal allowance.

Sub-Assistant Surgeons who now rank as Jemadars or Subedars will be brought on to the new rates of pay in the manner applicable to incremental salaries under article 156-A of the Civil Service Regulations.

2. There will be efficiency Bars at 5 and 10 years' service.

* 3rd class, 2nd class, 1st class, Senior 2nd class, Senior 1st class.

3. Subedars will form 10 per cent. of the sanctioned establishment and promotion to that rank will be made by selection only. As regards Subedar-Majors the existing conditions (Army Instruction (India) No. 530 of 1919) governing the grant of promotion to that rank will be maintained.

4. Separate orders will be issued on the question whether the personal allowance of Rs. 50 sanctioned for those classed as Subedar-Majors should continue on their transfer to the pension establishment.

5. Pending further orders pensions will continue to be assessed on the rates of pay which were in force before the publication of this instruction.

Copy of Army Instruction (India), No. 2, dated the 3rd January, 1922.

Grant of Honorary King's Commissions to selected Senior Sub-Assistant Surgeons of the Indian Medical Department.

It has been decided with the approval of the Secretary of State for India, to grant Honorary King's Commissions, as Captains and Lieutenants to selected Senior Sub-Assistant Surgeons of the Indian Medical Department holding the rank of Subedar-Major or Subedar, who have rendered distinguished service. The conditions governing the grant of these commissions are

set forth in the appendix to this Instruction.

2. Recommendations for the grant of such commissions to selected Senior Sub-Assistant Surgeons of the Indian Medical Department should be submitted to the Adjutant-General in India before 31st January, 1922.

IN THE U. P.

1. The designation of Civil Assistant Surgeons and Sub-Assistant Surgeons has been changed in U.P. as follows:

(a) Civil Assistant Surgeons—Provincial Medical Service. P.M.S

(b) Sub-Assistant Surgeons—Provincial Subordinate Medical Service. P.S.M.S.

Note.—The prefix of Mr. Lala, Pandit, Moulvi, etc., has been allowed according to personal inclinations.

2. Copy of Circular Docket No. 4533-89/J.50, dated 15th February 1922, from Inspector-General of Prisons to Superintendents of Jails in U.P.

The Sub-Assistant Surgeons attached to Jail may kindly be informed that the Government regrets that owing to funds not being available, the question of raising their allowances as recommended by the undersigned cannot be considered during the coming year.

The Government has also intimated that the question will, however, not be lost sight of, but will be taken up in connection with the recommendations of the Indian Jail Committee on the pay of Jail staffs.

(Sd.) J. M. MORLY, M.D.,
LT.-COL., I.M.S.,

Inspector-General of Prisons,
U.P.

CORRESPONDENCE.**District Board Doctors and
Charitable Dispensaries in Bengal.**

SIR,—There has set in a new era in the history of the country and it has brought in new hopes and aspirations. The India of to-day is not what she was years ago. A new ideal is beating her heart. This ideal is slowly but gradually permeating every walk of life. The greatest of all privileges to which a community may lay claim is the privilege of governing its own affairs and this privilege the Indians have got in certain matters affecting the interests of the country. The District Board and the Municipality have been given complete autonomy in the management of their affairs. They have been rendered free from official leading strings. This has imposed a serious sense of duties and responsibilities upon those who have become the guardians and trustees of the interests of the Self-

governing institutions. The voice of the public has become a powerful factor in the administration of the day. There is great awakening on all sides. Education and Sanitation are the crying needs of the country. The sanitary conscience of the people has to be aroused. This means diffusion of sanitary ideas amongst the people and specially the masses. There are, no doubt, Charitable Dispensaries here and there in rural areas but their number is few and far between. They are thinly scattered and hardly meet the requirements of the country. And even if they were multiplied, we do not think the present arrangement would mean much. The Dispensaries as they stand at present are not calculated to spread sanitary knowledge. It is a commonplace experience that it is through literature, magazines, journals, periodicals, monthlies, pamphlets and leaflets that the people are likely to get their knowledge of sanitation. And in order that these dispensaries may prove of real help to the Sub-Assistant Surgeons, who are placed in their charge, every dispensary should be provided with a small decent library containing medical literature. The science of medicine is ever improving, old theories are being exploded and new ones taking their places. Instruments, apparatus and appliances facili-

tating the treatment of a disease are being almost daily invented anew. A medical officer should, therefore, study hard and try to be up-to-date in his knowledge and information. He must know how to look around the world and be varied in his experience. He should be fully equipped in knowledge and armed cap-a-pie in order that he may inspire public confidence.

But this library alone cannot go to the root of the matter. The pay and prospects of the medical officers under the District Board should be sufficiently increased. There is a world-wide economic stress. This has seriously affected all sections of the people and the Sub-Assistant Surgeons have not been exempted.

Those who serve the District Board have to undergo all the disadvantages of the same class of officers under the Government *minus* the advantages. The qualifications of the Sub-Assistant Surgeons under the District Board are exactly similar to those of the Government. They pass the same examination and have to survive the same test. But when they begin service, their scale of pay becomes different and this difference in pay gets on all through life. Nor is this all. A Sub-Assistant Surgeon under the Government has

a splendid opportunity before him. He may be promoted to the post of Assistant Surgeon. He may become the Deputy Superintendent of a Medical School. He moves in a higher and stimulating atmosphere living as he does in a town. He enjoys all the comforts and luxuries of modern life. He is in close touch with the intellects of the country. He has within easy reach the opportunities of educating his kith and kin, his sons and daughters. Let us now turn to the other side of the picture. A Sub-Assistant Surgeon, under the District Board has to fret and fume away his life in a remote corner of the district. He has often to mix with people who are unschooled and unprincipled. He has to walk through woods and wade through water to make the people feel the benefit of his knowledge of medicines. There are several places where there are no schools. And if he has got children, he cannot, with his limited resources, afford to send them to a town, where living is dear. He cannot, therefore, give them proper education. Thus he is driven from pillar to post and his position is bad. Such a state of things cannot contribute to the success or efficiency of a Sub-Assistant Surgeon. The greatest of all problems is the problem of bread, and unless the mind of

a Sub-Assistant Surgeon is freed from all cares and anxieties, it is vain to expect that he would bestow undivided attention upon his duties. The first thing, therefore, to which the attention of the District Board authorities should be invited, is the question of the enhancement of pay and prospects of the Sub Assistant Surgeons serving under them. Now that the country has been fully alive to the importance of sanitation and when the country has got the power to do the Sub-Assistant Surgeons the justice they deserve, we hope our prayer will not go unheeded.

RAJENDRA CHANDRA GANGOPADHYAYA.

Bidyakut, Tipperah.

OUR ACTIVITIES.

Darjeeling.—Meeting held at the Victoria Hospital, on 16th September 1922. Six members were present.

Read and confirmed the proceedings of the first meeting.

Passed the accounts for the month of August 1922.

Considered Mr. Chatterjee's request (a local Homeopathic doctor) to become a member of this Association. The Secretary had been asked to refer the matter to the General Secretary.

The Secretary informed that he has not yet received any reply to his first letter addressed to the General Secretary. He has been asked to write to him again, forwarding him a copy of the proceedings of this meeting.

The Secretary is asked to send for a copy of the *Indian Medical Gazette* for a period of six months.

Resolved that a remuneration of Rs. 2 per mensem be paid to the clerk with effect from 1st September 1922 and that all the papers and correspondence regarding this Association be made over to his charge.

The Secretary was again asked to communicate with the Sub-Assistant Surgeons of this district who have not yet shown their willingness to enlist themselves as members of this Association.

The meeting was closed with a vote of thanks to the chair.

Gujarat.—Meeting held on 17th September 1922. Nine members were present.

The following resolutions were passed:—

(1) Expressing condolence about the death of Dr. Nilkanthrai Dahyabhai (a copy of the resolution to be sent to the eldest son of the deceased).

(2) Adoption of the representation to be sent to Government about styling the service of Sub-Assistant Surgeons as the Bombay Medical Service.

(3) Appointment of the President, Vice-President, Honorary Secretary and members of the Managing Committee as follows:—

Dr. Joseph Benjamin, President.

Rao Saheb Dr. Shunkerlal K. Vyas, Vice-President.

Dr. Chunilal T. Behrawalla, Honorary Secretary.

(4) That this meeting offers its hearty congratulations to Rai Bahadur Dr. Sarju Prasad on his appointment as C.M. Officer and Durbar Physician, Indore State.

Gwalior.—Meeting held at the J. A. Hospital, on 2nd September 1922.

The meeting was presided over by Major V. M. Phatak, Chief Medical Officer and Sanitary Commissioner, Gwalior State, and was attended by all the officers at the head quarters and some fifteen Sub-Assistant Surgeons.

A paper on "X-Rays in Oriental Sore" was read by Sub-Assistant Surgeon Lt. N. B. Moghe, J.A. Hospital, Lashker and discussed in the meeting.

NOTES AND COMMENTS.

We are glad to note that one more Branch of our Association has been opened recently, viz., at Darjeeling, and that it has been formally affiliated with the All-India Sub-Assistant Surgeons' Association. We trust that other unrepresented centres also will follow suit soon.

Infantile Cirrhosis of Liver (or Infantile Biliary Cirrhosis) is a disease which carries away many infants in India; and yet the etiology and treatment of the disease have not yet been as well expounded as they ought to be. We are, therefore, very glad to welcome a new publication* on the subject from the pen of Dr. S. K. Mukerji, Editor, *The Indian Medical Record*. The author has, in this useful little book, dealt with the etiology, causes, diagnosis and treatment of the disease clearly and effectively. We are sure that the book will prove of great use both to the medical practitioner as well as to the student.

We regret very much to record the death, which took place on

* "Infantile Cirrhosis of Liver" by Santosh Kumar Mukherjee, M.B., M.R.A.S. "The Indian Medical Record Book Depot." Calcutta. Price (cloth) Rs. 2-8.

12th. September, 1922, of Dr. Nilakantharow Dahyabhai Chattrapati L.M. & S., Principal of the Victoria Memorial School for the Blind, Bombay. Dr. Nilakantharow was for some time Professor of Chemistry at the B.I. Medical School, Ahmedabad, and while demonstrating some experiments he lost his eyesight at the age of thirty-seven. He was afterwards appointed Principal of the V.M. School for the blind and occupied that position for about twenty years. During this time he was working hard to ameliorate the condition of the blind and started an institution with some medical men to remove the causes which contribute to blindness. The All-India Sub-Assistant Surgeons' Association has special reasons to remember him since he was one of our patrons and a guiding spirit in regard to our movement from the very beginning. He had attended almost all our conferences and had given very valuable advice on these occasions. It is superfluous to add that he had evinced a deep sympathy with regard to the grievances of the Sub-Assistant Surgeons and had taken a genuine interest in the welfare of the class. We offer our sincere condolences to the bereaved family.

The All-India Sub-Assistant Surgeons' Association.

Statement of Accounts for the Month of July, 1922.

Dr.	Rs. As. Ps.				Cr.	Rs. As. Ps.		
Balance brought forward from last month's account ..	15,868	11	4		Postage ..	28	0	0
Subscriptions from old and new members in- cluding admission fees.	404	6	0		Stationery ..	14	12	6
Advertisement ..	37	8	0		General Charges ..	2	8	0
					Establishment ..	132	0	0
					Rent ..	23	0	0
					Total Rs. ..	200	4	6
					Balance Rs. ..	16,110	4	10
Grand Total Rs. ..	16,310	9	4		Grand Total Rs. ..	16,310	9	4

Details of Balances :—	Rs. As. Ps.
General Secretary ...	555 7 6
Editor ...	2,725 9 4
Imperial Bank, Indore..	2,955 1 0
Fresh 5 years' Postal Cash Certificates ...	7,502 0 0
5 years' War Bond ...	1,500 0 0
Government Promissory Notes ...	500 0 0
Amount in Postal Saving Bank at Ahmedabad ...	170 1 7
Treasurer ...	53 4 8
With various Office-bearers ...	148 12 9
Total Rs. ...	16,110 4 10

Indore, 28th September, 1922.

G. D. KHANDEKAR,
M. C. P. S.,
Treasurer,
The All-India S. A. S. Association.
SURJOO PRASAD,
RAI BAHADUR,
General Secretary,
The All-India S. A. S. Association.
JOSEPH BENJAMIN,
Chairman,
Finance Committee.
8th Oct., 1922.

In the December (1921) accounts published in the June issue of the *Indian Medical Journal* (p. 354), please read against "Interest from Postal Savings Bank at Ahmedabad," Rs. 49-15-11 in place of Rs. 49-15-9, and under the head "Details of balances," please read against "5 years' Postal Cash Certificates," Rs. 5,812-8-0 in place of Rs. 5,812-0-0.

THE Indian Medical Journal

A Monthly Magazine devoted to Medicine,
Surgery, Public Health, etc.

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EDITED BY D. V. VENKAPPA.

Vol. XVI] NOVEMBER, 1922. [No. 11.

TREATMENT OF ACUTE DYSENTERY.

There is no doubt that much of the confusion that has arisen in the treatment of Acute Dysentery has been due to a deficient diagnosis of the particular variety of the disease. Dysentery is only a term including many different etiological factors, and each individual type must be accurately diagnosed before success in treatment can be hoped for. We propose to deal with Bacillary and Amœbic Dysentery only, though this ailment is the result of Malaria, Kala-Azar and Bilharzia. Bacillary Dysentery is the form of Dysentery met with in asylums and hostels, and amongst pilgrims and troops. It is characterised by its epidemic tendencies and this fact is sufficient to make one suspect its presence. It is not always possible to discuss the type of bacilli of the Dysentery unless a laboratory is near at hand where the necessary media for growing and separating these germs are kept. For general clinical purposes, if a case of Acute Dysentery occurs during an epidemic, if no amœbæ are demonstrable in the stool,—an examination quite within the limits of the general practitioner,—and if other causes such as malaria etc., are absent, then it may be called a bacterial case.

it is often known only in a vague and general sort of way, I propose to state it here as I believe it to be accepted by most of its advocates.

(1) Our object is to prevent malaria parasites from establishing themselves in the blood, *i.e.*, to kill them. For this purpose we know from the therapeutic use of quinine salts that small doses are useless, but we have good reason to believe that about 1 gm. of quinine hydrochloride per diem, for an individual of about 65 kilos body-weight, is effective, at any rate in infections of moderate severity. We have no reason to believe that the amount of quinine required to kill should vary to any great extent with the number of parasites. Presumably the concentration of alkaloid obtaining in the blood is decisive. Therefore the prophylactic doses should be the same as the therapeutic, *i.e.*, about 0.015 gm. per kilo body-weight or when individualization is impracticable, 1 gm. per diem per individual.

(2) In order to prevent disease, the prophylactic dose should be given before the parasites have increased sufficiently in number to produce fever, *i.e.*, before the end of the natural incubation period of which the minimum in 'malignant tertian' infections is six days, according to Ross (1911).

(3) A certain amount of evidence tends to show that malaria parasites may acquire an increased resistance to the deadly effect of quinine. This we hope to avoid by killing them off, instead of keeping them under, living in the tissues subject to the continued action of quinine, but unable to produce fever, until perhaps they have become 'quinine resistant.' To these fundamental principles I would like to add a few remarks.

The administration of 1 gm. every sixth day might perhaps be sufficient. But as we know from treatment that the cumulative effect is of importance, and have often seen parasites persisting in the blood after the first day's dose of 1 gm., only to disappear after the second dose, it is strongly advisable to add another day's administration and first two consecutive days of each week for its administration. This has the great additional advantage that it makes it easy to remember, especially if one of the two days is Sunday, thus either Saturday and Sunday, or Sunday and Monday. Another additional advantage is that the dose may be varied without having recourse to tablets of various sizes. Thus individuals between 60 and 70 kilos body-weight take four tablets of 25 cg. each, on Saturdays and Sundays, individuals of 50 and 60 kilos four

tablets on Saturdays and three on Sundays, of 40 to 50 kilos three on each of the two days, of 70 to 85 kilos five on Saturdays and four on Sundays, of 85 to 100 kilos five on each of the two days, and so on.

Should the prophylaxis fail, a febrile attack would probably develop and be treated. On the other hand, by the daily administration of small doses we may expect chronic infections without fever, but with anæmia and cachexia, or with low fever, likely to present considerable difficulties for diagnosis and treatment.

If the prophylaxis has achieved its result, the administration of quinine may cease at once when exposure to infection comes to an end. On the other hand, the survival of parasites in an enfeebled condition in the blood, the result to be expected from the use of daily prophylaxis, would make it necessary to continue the use of quinine for a long time after return to non-infected places. We see, in fact, that the advocates of the small daily doses advise the continued quinine taking at home, often during the whole of the leave.

For the last twelve years or so, whenever in Malaria-infected countries I have adopted and advised the adoption of this system, and I have never yet seen a case of malaria in an individual

whom I had reason to regard as its regular follower. I have seen short fevers in individuals who had adopted it late in their tropical career having already been infected before. This is what one would expect. A few cases occurred in men who said they had adopted the system, but in which I could prove that they had not taken nearly the total amount of quinine corresponding to the period in question."

I began to follow the above method of "week end prophylaxis" in March, 1921, and, although I have lived in very highly malarious tracts these twenty months—most of the time in endemic areas of Blackwater fever,—I am glad to report I never had an attack of malaria. I used 15 grs. of Acid Quinine Hydrochloride in solution on two consecutive days of each of the weeks that I spent on tour in the Malarial hill tracts. I never used any quinine during my stay at Headquarters which was well away from the infected areas, in the plains.

I also found that unpleasant symptoms such as ringing in the ears, dizziness, etc., could best be avoided by taking the drug last at night. Incidentally, I might be permitted to point out that, as the question of prevention of Blackwater fever resolves itself

into one of malaria prophylaxis, it is all the more important that one should protect himself from Malaria.

NOTES ON SPLENOMEGALY AND SPLENECTOMY.

BY J. SOUTTAR MCKENDRICK,
M.D., F.R.F.P.S.G., F.R.S.E.

Splenomegaly, or enlargement of the spleen, occurs in almost every infection. It may not be enlarged clinically, *i.e.* it may not be felt below the left hypochondrium, but pathologically it is larger than normal. A spleen must be twice its size before it can be felt. Apart from infection, it may be enlarged from inflammations, infarctions, passive congestion, lardaceous disease, tumours, and cysts. It may be enlarged also in many blood diseases, such as leucocythæmia,

* Read at a meeting of the Pathological and Clinical Society of Paisley, on 30th March, 1922.

† The spleen may be enormous, and this has been shown to be due to inflammatory congestion, and not only to infarctions that so frequently occur. Infarctions may be present in spleens of comparatively small size. Last summer, when in charge of the medical wards in the Western Infirmary, I had a patient who obviously suffered from malignant endocarditis. He was middle-aged, with double mitral disease, and he had a continuously high temperature for over two months. The liver was large, there was albumen and blood in the urine, and some œdema of the legs.

lymphadenoma, splenic anæmia, and hæmolytic jaundice, &c. The spleen weighs in the adult about 7 oz. but in disease it may assume enormous proportions, and weigh in some cases over 100 oz. The more common conditions associated with great enlargements of the spleen are typhoid fever, cirrhosis of the liver, ulcerative endocarditis,† syphilis,** malaria, mitral disease, as well as the blood diseases, leucæmia, lymphadenoma, splenic anæmia, polycythæmia with splenomegaly‡ (Von Vacquez' disease), typhus fever, pyæmia. It is enlarged considerably as a rule in Malta fever, §§ kala azar (Leishmania donovani), pneumonia, tuberculous disease,§ rickets, rheumatism, and influenza. During the influenza epidemic of 1918, I could frequently feel the

The spleen was very much enlarged, out of all proportion to what one would have expected from simple venous engorgement. These spleens vary considerably in size from time to time, just as does the malaria spleen, and sometimes suppurative changes may occur.

**According to Still, an authority on children's diseases, splenomegaly occurs in fully one-fourth of the cases of congenital syphilis, and the splenic enlargement is often associated with anæmia and enlargement of the liver and lymphatic glands

‡ A tumour-like formation of red cells in contrast with tumour-like formation of white cells in leucæmia.

lower edge of the spleen in the serious septic cases.

Some years ago I attended a lady suffering from rheumatoid arthritis. Her illness had been present for thirty years. She had visited every spa, and tried all medicines with no arrest of the disease. I could find no focus of infection anywhere. Rather more than a year before her death, I noticed that the spleen was enlarging. It steadily increased until it extended down to the umbilicus. A few months before her death a fluctuant swelling appeared above the left clavicle, and a large abscess was opened containing about 5 oz. of pus. Unfortunately I had not the pus examined for organisms. It was ordinary fluid pus, without caseating material. The case was interesting in the first place, as the enlargement of the spleen heralded some infective process which at first was unrecognisable, and in the second place, the arthritic

The spleen may be enormous, also the liver; red cells 5,000,000 and over; hæmoglobin above 100 per cent. leucocytosis; cause unknown: splenectomy never successful.

§§In this fever the spleen is often very large. The micrococcus melitensis is found in the spleen pulp. In the Kasauli Institute in India my brother, when experimenting with the micrococcus, got accidentally inoculated. He had a remittent temperature for six months, accompanied by profuse perspiration. On his arrival at home, the temperature was still swinging.

process may have been due to the same infective agent. Although I have frequently hunted for an infective agent in cases of rheumatoid arthritis, and the pathologist has discovered the streptococcus longus in the tonsils and at the roots of the teeth, and has recommended sometimes a vaccine for its treatment, I cannot recall ever having noticed before an enlargement of the spleen by physical examination.

The spleen is the largest of the ductless glands. It is covered completely by peritoneum, and lies between the diaphragm and stomach. It is often adherent to the diaphragm when diseased, thus rendering the operation of splenectomy difficult. Under the peritoneal lining is the capsule of the organ, and from it trabeculæ enter the organ, forming a framework for the spleen-pulp. This pulp is composed of cells, some granular corpuscles, some normal

and I found he had a large, somewhat soft spleen, tender to pressure. It passed well down below the umbilicus. The disease had evidently run its course, or the fact of getting home after a long, trying journey had a cheering effect, for in less than a week the temperature became normal, and the spleen as rapidly subsided. I have never before felt a large spleen subside so rapidly as it did in this case.

§ The spleen may be large, and this may be due to tuberculous infarction only, and complicated by lardaceous disease.

or altered cells, and some large pigmented cells. The capillaries of the splenic artery and vein are closely connected with the reticulum of the spleen-pulp. On the sheaths of the minute splenic arteries are the Malpighian corpuscles, lymphoid in character (Clifford Allbutt).

Now, what are the functions of this organ, consisting, as it does, chiefly of Malpighian lymphoid bodies and spleen-pulp? These are, according to Halliburton,—

1. The formation of colourless blood corpuscles.
2. The formation of coloured corpuscles, in some animals hæmatoblasts.
3. The disintegration of red corpuscles. Effete corpuscles are stored up in its substance. The spleen is often called the "scavenger" of the blood, or the "graveyard" of the red corpuscles.
4. It has some share in nitrogenous metabolism.
5. It acts as a kind of vascular reservoir to the portal system, and the vessels of the stomach.

The effects of splenectomy have been carefully studied in animals, and the researches—more especially of Noel Paton, Goodall, Gulland and Fowler—have proved that the spleen may be removed from the dog, cat, or rabbit with little or no change re-

sulting in the nature of the metabolism, either during fasting or after feeding with flesh, oatmeal, or foods rich in nucleins, as thymus gland. They show us, moreover, that the spleen has no important action as a blood-forming organ, nor is there evidence that the spleen has any active hæmolytic action. Digestive leucocytosis is normal in spleenless dogs. The spleen is therefore not essential to life. The function of the spleen, when removed, is taken up by the lymphatic glands and hæmolymp glands.

In infections, the structure of the spleen is altered. Professor Muir tells us that the phagocytic activity of the cells in the pulp constitutes an outstanding feature. The cells concerned are the non-granular cells, hyaline and epithelial. The swelling is due to destroyed elements, such as bacteria, neutrophile leucocytes, and red corpuscles. Nucleated red cells and myelocytes are present—probably washed out, Professor Muir thinks, of the bone marrow, and caught in the spleen. There is also a great proliferation of cells at the margin of the Malpighian bodies, so as to form a zone around them. These cells are large lymphocytes with basophile reaction.

The spleen, then, is hyperæmic and soft, and full of a variety of cells and bacteria quite different from the cyanotic spleen met with

in cirrhosis of the liver and in portal phlebitis. There is another form of splenomegaly which is believed to result from cirrhosis of the liver, called "splenomegalic cirrhosis," and the general belief is that an infective agent, which probably comes from the bowel, produces biliary cirrhosis in the first instance, and passes up against the current of blood into the spleen, and there produces its great enlargement. The spleen may be enormously enlarged in such cases, even though the liver is only slightly enlarged. If jaundice be present, the disease is often called "splenomegalic jaundice." In these cases there is often pigmentation of the skin, clubbing of the fingers and toes, and stunted growth. Such a state of matters does not occur when the spleen is primarily affected, and Banti's disease, with cirrhosis of the liver and ascites follows. You will see, however, how indefinite and confusing these various forms of cirrhosis are, depending on whether they are primary or secondary.

In more chronic infections and toxæmic processes, changes in the reticulum occur, causing a fibrosis. This is well demonstrated in the malarial and syphilitic spleens. In splenic anæmia there is perisplenitis, fibrosis of the Malpighian bodies and throughout the pulp, and sclerosis of the splenic veins.

What are these toxic substances? This is very indefinite, but it is probable that they originate from some portion of the body, such as from the mucous lining of the alimentary canal, from the teeth, or from some hidden source of infection. These toxic substances gain entrance to the spleen, and from there pass along the splenic vein to the liver, causing cirrhosis, and after passing through the heart and lungs, find their way into the substance of the bone marrow. These toxic substances may have a selective affinity for certain tissues, and they may possibly act as irritants, or the reverse. They may produce anæmia, hæmolysis, asthenia, cirrhosis of the liver, fibrosis of the spleen, changes in the lymphatic glands or bone marrow.

As I have said, organisms find a resting-place in the spleen. Do these organisms multiply in the spleen and increase the toxæmic processes, or are they killed in the spleen? Active phagocytosis occurs in the splenic pulp, so that a defensive process is going on. When splenectomy is performed, this defensive process is not altered, as the lymphatic glands and hæmolymp glands take up the work.

The anæmias of unknown origin associated with splenomegaly are leukæmia, Hodgkin's disease, splenic anæmia, and anæmia

say that X-rays and arsenic had no effect.

It is in *splenic anaemia*, however, that splenectomy has been attended with the best results.

It is to the late Sir William Osler that we are mostly indebted for a clear picture of the character and symptoms of *splenic anaemia* of the adult type.

His definition is "a disease, possibly an intoxication of unknown nature, characterised by great chronicity, primary progressive enlargement of the spleen, which cannot be correlated with any known cause, anaemia of a secondary type with leucopenia, a marked tendency to hæmorrhage, particularly from the stomach, and in many cases a terminal stage with cirrhosis of the liver, ascites, and jaundice." Associated with it there is often pigmentation of the skin. There is no enlargement of the lymphatic glands.

Recently groups of cases, which were previously considered to be *splenic anaemias*, have been removed from the class—(1) *Gaucher* type of *splenic anaemia*, characterised by enormous spleen and liver, with characteristic cells (almost like cancer cells in the pulp), occurring in families, &c.; (2) *syphilitic spleens* (the Mayos have removed such spleens with great success—the anaemia associated with the condition dis-

appearing and less antiluetic treatment being required to effect a cure); (3) in *kala azar*, now that the etiology is known—*Leishmania donovani*—cured by injection of tartrate of antimony.

In true adult *splenic anaemia*, the spleen may grow to a very large size, without any feeling of discomfort to the patient, and without any anaemia. Unexpectedly, perhaps a hæmorrhage, or a series of hæmorrhages, occurs from the stomach, and an *anæmic* condition, often with pigmentation, develops. Sir Humphry Rolleston suggests that the secondary anaemia is due to poisons produced in the spleen, inhibiting blood formation, and it is probable that the cause of the anaemia, therefore, is not one of hæmolysis. The blood picture is one of secondary anaemia, with low colour index, and a leucopenia.

It is thought that injurious poisons reach the spleen from the intestinal canal, and these set up a fibrosis of the organ, and secondarily, these injurious substances, increased, it may be, in the spleen, pass out by the splenic vein, and set up a cirrhosis of the liver (portal type), with ascites following. This terminal stage is called *Banti's disease*. It is characteristic of the disease, that the lymphatic glands are not involved, and the bone marrow is little

altered. Frequently thrombosis of the portal vein has been noted, and some observers have believed that stenosis of the splenic vein or portal vein, due to phlebitis and thrombosis, is the chief cause of *splenic anaemia* and *Banti's disease*.

An essential condition in the diagnosis of *splenic anaemia* is that the splenomegaly must have occurred many years before the cirrhosis. In portal cirrhosis (*Laennec*), or in the biliary cirrhosis of *Hanot*, the splenomegaly occurs at the same time or at a later stage than the enlargement of the liver.

It is in true *splenic anaemia* that splenectomy has met with such good results. It is the only treatment; it prevents the occurrence of hæmorrhages; it improves the condition of the blood; and even cures or arrests the terminal stages, as found in *Banti's disease*.

Sir Berkeley Moynihan has operated on many cases, and so have the Mayos of Rochester. Moynihan does not operate after a severe hæmorrhage or when the spleen is very large; he applies radium to it first, and when sufficiently shrunk, if that be possible, he operates.

He says it is better to operate early, and not to wait until the patient has become very anæmic and has *Banti's disease*. If this

is done, there is less chance of adhesions causing hæmorrhage, when being broken down from the under surface of the diaphragm. Up to 20th September, 1920, the Mayos did the operation in 73 cases, with 9 deaths, equal to a mortality of 12.3 per cent. The death-rate would be less, did it not include the late cases.

Operative technique has done much to reduce the death-rate after splenectomy. Mr. Spanton tells us that from 1866-75 the death-rate was 75 per cent. From 1876-85 it was reduced to 59 per cent, and the latest statistics of the Mayos bring it down to 12.3 per cent.

I shall now read you notes of a case that I published some time ago, which, if not a true *splenic anaemia*, had most of its characters, and was unique. I think, in being the first case of anaemia treated by splenectomy in the Western Infirmary. I think I am right in saying this.

S. R., aged 8 years, was admitted to the Western Infirmary on 26th July, 1912, complaining of weakness, breathlessness, and loss of appetite.

She was well up till four years ago, when she suffered from diarrhoea. She gradually became anæmic, and no medicine had any effect. Six months ago her eyesight became affected, and she

heart disease, &c., and we are left with a few obscure blood diseases, namely, pseudoleukæmia infantum (Von Jaksch's anæmia), myelogenous leukæmia, pernicious anæmia, splenic anæmia of the adult and Gaucher type, and lastly acholuric jaundice with splenomegaly.

(a) Von Jaksch's anæmia. In this disease, there is a marked leucocytosis, with decided increase in lymphocytes, myelocytes, and nucleated red cells. The disease is a secondary anæmia, and usually clears up with arsenic and cod liver oil. In the present case, the child did not improve with ordinary remedies.

(b) Myelogenous leukæmia. The examination of the blood, and the characters of the bone marrow and spleen were entirely different from those met with in this disease.

(c) Pernicious anæmia. The character of the blood, chiefly the high colour index and the presence of megaloblasts distinguish it from the case above narrated.

(d) Splenic anæmia of the Gaucher type. There was no family tendency, and the spleen did not show the characteristic "Gaucher cells" characteristic of the disease.

(e) Acholuric jaundice with splenomegaly, acquired and congenital. In this disease the icteric tinge of the skin occurs in early

infancy, whereas in splenic anæmia it does not occur until the later stages, when the liver has become affected. It is, moreover, a familiar disease. An important test for differentiation between the two is by observing the fragility of the red blood cells to hypotonic saline solution. In acholuric jaundice, the cells are more friable, hæmolysis is more active, and may be as high as 0.7 or 0.8. In normal cases lysis occurs at 0.4, whereas in splenic anæmia lysis is less active, and does not occur until 0.3 is reached. In the above case unfortunately this test was not applied.

The Mayos did splenectomy in 32 cases of acholuric jaundice, with 1 death, and the results were excellent. Without operation the acquired form is almost invariably fatal.

The main fact in the above case, whatever the diagnosis, is that the patient was seriously ill, despite three years of active medical treatment, and she completely and rapidly recovered after splenectomy. Professor Chaufford, in the conclusion of his address on Medicine at the International Congress held in London in 1913, said, "It is only by the publication of the results of cases in which the spleen has been removed that we can hope to learn of the advisability of splenectomy, and of the true nature of these splenic tumours."

The Origin of Syphilis, According to Fracastoro

BY WILLIAM RENWICK RIDDELL,
LL.D., F.R.H.S., ETC.

*President, Canadian National
Council for Combating
Venereal Disease.*

Girolamo Fracastoro, a very learned physician of Verona (and equally learned as a mathematician, astronomer, Latinist and philosopher), was driven from that city to his country place at Cafi, some fifteen miles away, by the plague in 1521. There he employed his enforced leisure in writing a poem in Latin hexameter, published at Verona, 1530, in which the word "syphilis" was used for the first time—"Syphillidis sive Morbi Gallici libri tres." Some years later he published a prose Latin work, also in three books, "De Contagionibus, et Contagiosis Morbis et eorum Curatione," in several chapters of which syphilis was discussed more fully than "poetry would permit," as he puts it.

The causes and origin of the disease were then a much debated question; and it may be of interest to give the views of the inventor of the name.

He states that the Morbus Gallicus made its appearance in Italy at the time of the occupation of Naples by the Gallici (French) under Charles VIII;

"about ten years before 1500" (in fact 1494-5)—and that it received its name from that people; that the French in turn called it Morbus Italicus, the Spaniards, Patursa, the Germans, Morbus Mevius or Gallicus.*

He does not admit the identity of the disease with Elephantiasis (Elephantia, Elephas) or with Lichen or the disease for which Avicenna prescribed "thus," with oil and vinegar, as contended by some physicians of his time. While he says that it was as native and as common in the recently discovered New World as scabies in Italy, he denies that it could have been caused by contagion from that place. Admitting that he can find no trace of it in the Old World at an earlier time, he contends that it must have existed there although all trace of it is lost; and he ventures the prophecy that it would soon disappear leaving no trace behind; only, however, to reappear in after ages, when a similar unusual combination of circumstances should recur. He gives various reasons for the belief in

* The English generally called it Morbus Gallicus or French Pox, the French, Morbus Italicus or Mal de Naples; Iwan Block's well-known work "Der Ursprung der Syphilis" (Jena, 1901) gives a list perhaps not quite exhaustive of the names given to syphilis, 18 pages long.

its prevalence in Europe in former ages—none at all very convincing. One of these is so singular and interesting that, although I have already made use of it more than once, I give it here again and in his own words (translated). He says:—“A friend of mine, a barber,* had a little and rather old book of recipes (experimentorum), among which was one entitled, ‘For crass scabies accompanied by pain in the joints’; when the disease first appeared, he thought that it indicated crass scabies; and remembering the medicament, he consulted some physicians as to whether he should use it in this new contagion. The physicians examined the medicament and strictly forbade its use, as it was made of mercury and sulphur. He would have been fortunate if he had not consulted these doctors for he would have become wealthy—but he obeyed, not venturing to use his medicament. Later on, having tried it and found it highly effective, he was angry that others had got the money which he should have made.”†

* Barbers were then the surgeons: it was beneath the dignity of a physician to practise surgery—*Nunc, quatum mutatus!*

†I am reminded of the story of Berenger de Carpi, who is said to have been the first user of mercury in syphilis (in 1497). He became

That the disease came from the New World, prevalent as it was there, Fracastoro did not believe; it could not in so short a time have overrun Spain, France, Italy, Germany, nearly all of Russia and Poland, and parts of Asia and Africa.

He states as a fact that astrologers prophesied the advent of a new and serious disease some years before syphilis struck Europe, from their knowledge of the motions of the stars. His theory, as to the veridity of which he has no doubt, is that it arose from the conjunction of the three “Superior” Planets—Saturn, Jupiter and Mars—superior, because they were supposed in the geocentric Ptolemaic astronomy of the day to be above the sun, the other two, Mercury and Venus, being below the sun.‡

famous and made as much as 6,000 pistoles in a year—he charged exorbitant fees, and his patients had to pay him what he asked. His motto was *Accipe dum dolet*—Get it when he's sick.

‡Guy de Chauliac, the celebrated surgical author of the 14th Century, attributed the Black Death to the conjunction of Saturn, Jupiter and Mars in the Sign Aquarius, March 24, 1345. Fracastoro expresses the same view in his poem *Syphilidis sive Morbi Gallici, Lib. I, vv. 185-195*, a very interesting poetical description of its course in Asia, Africa and Europe.

He denies any direct deleterious action—action *per se*—of the planets; the mischief was caused, *per accidens*. By the conjunction of these planets in one Sign, a tremendous evaporation was set up; the vapors mingling with the air were agitated in many directions and ultimately caused a “sordid putrefaction,” i.e., a putrefaction extending into the mass and not simply superficial. According to his theory of contagions, every contagion contained a putrefaction; but not all putrefactions caused a contagion. Putrefaction consisted in the emission of very minute, insensible particles; if these were dry, they could not coalesce; but if mucous and hot, they agglutinated together to form “seminaria,” seed-beds, nurseries, of infection. The putrefaction induced by the planet-raised vapors was such that “seminaria” were formed; these, invading man, found their analogue and field of action in crass, sordid and mucous phlegm, “whence was born this disease, which has affected so many mortals, so many regions, partly indeed, by the air itself sending in (immittente) the ‘seminaria,’ and partly by contagion from one to another.”

“Phlegm” was, of course, one of the four “humors” in the human body upon the due proportion (crasis or temperamentum) of which so much depended

—Sanguis (Blood), Phlegma or Pituita (Phlegm, Rheum), Chole or Cholera (Yellow Bile) and Melancholia (Black Bile); as a “humor,” it has disappeared along with Melancholia, leaving but words behind.

The infection being now fixed in the human phlegm, it creeps slowly through the mass of the blood, finding food for itself in the phlegm—the part which is less crass and less sluggish (segnis) is driven to the skin and causes pustules; the part which is more crass and less capable of being expelled to the skin, takes up its position in the arms and nerves and causes severe pains; and the most crass is coagulated around certain parts and is hardened, “concreted,” into gummosities.

Fracastoro says that when the disease first appeared very many were infected without contagion from another but from the air itself—that he has seen many such instances—but adds that for some twenty years the disease has been changing, and that now it is contracted only by contagion—generally coition, but infants sometimes contract it by sucking an infected mother or nurse. The contagion, moreover, is not so active or so easily taken as formerly.

For some twenty years before he wrote, the pustules had been becoming fewer and drier, the

gummosities more numerous, and the pains when they did occur, more severe.

For about six years, another change had been in progress, the pustules were seen in very few, the pains in almost none and when they did occur were much less severe, but the gummosities were very many—"and what seems strange to everybody, the fall of the hair of the head and other parts makes men almost ridiculous, some coming into view without beard, others without eyebrows, others with a shining poll, which misfortunes were formerly believed to be caused by medicaments, especially mercury, but later on everybody knew it to proceed from the disease itself having changed—and, what is worse, now many are found with loosened teeth, in some, the teeth have fallen out."

It may be noted that Fracastoro places syphilis (in its then existing state) in the first class of contagions, *viz.*, those infecting by touch alone; he denies that it can infect by "formes"* *i.e.*, by leaving behind "seminaria" of infection on clothes, wood, etc., which themselves not infected nevertheless furnish a nidus for preserving and transmitting infection.

* "Fomes" is literally "tinder", "touch wood": it is the word used by Fracastoro "Syphilidis, etc.", Lib.

NOTES OF CASES.

A Case of Aneurism of the Ascending Aorta with Aortic Regurgitation.

BY T. K. JEJURIKER, L.C.P.S.

Cases of this kind are not very common, and though some have been reported it is the third case in my experience, two cases having been seen by me as a student. Hence I thought it fit to report the same in the columns of your journal and would, therefore, like to invite the opinion of experienced brethren in the Profession.

Patient by name Mr. Krishna Row Sitaram Phatak, aged 35, occupation clerk, caste Brahmin, residing in Baroda, came to me on the 18th September, 1922, with the following symptoms and signs:—Pain in the chest to the right of the sternum at the first

III, v. 163, for the fuzze for touching off the fire-lock. In his prose work, the clothes, wood, etc., furnishing a nidus for "seminaria contagionis," are called "fomes."

There was a third kind of contagion according to his theory that is, contagions acting not only by actual contact and by "fomes" but also at a distance like the glance of the lethal beast, Catablepha, which can kill a man at a thousand paces by looking at him. Certain lippitudes are of this kind as are phthisis contagiosa and pestilential fevers like the English sweating-sickness, the Black Death, etc. These probably act by a *species spiritualis*.

intercostal space and also at the back near the vertebral border of the right scapula about its middle. It was not acute but was only occasionally felt in the above-said areas. He had cough and dyspnœa also, but they were not giving him any trouble.

His past history.—No history of Syphilis or any fall or injury to the chest; addicted to excessive drinking of tea, and smoking of tobacco, and keeping late hours in the night, also very irregular in taking his food.

Present history.—Paroxysmal pain. Does not get it at any particular time. Is sharp and penetrating. Never gets any pain while asleep. A point to be noted is that the true aneurismal pain is felt while the patient is asleep. I thought the pain was due to pressure on the ribs and the pain felt at the back due to its being reflected along the intercostal nerves. The patient does not get dyspnœa while at rest, but on exertion, such as walking for some distance, the pain starts. Hence I thought it to be cardiac dyspnœa due to aortic regurgitation associated with the aneurism and also pressure upon the trachea or upon the bronchus. Cough with little expectoration but irritating and hacking probably due to pressure upon the latter organs.

Physical Signs (a).—*Inspection:* (1) Abnormal pulsation in

the chest just at the second right costal cartilage, *i.e.*, in the aortic region, to some extent heaving and expansible. (2) Slight bulging in the aortic region. (3) Apex beat displaced downwards and outwards. (4) Throbbing of the carotids and also of other arteries. (5) Irregular pupils.

(b) *Palpation.*—(1) The size of the tumour is slightly reduced for the past month and a half, and is soft in consistency. The forcible pulsation just like a thrill is felt at the aortic region.

(c) *Percussion.*—(1) Distinct dulness in the aortic region. (2) Area of cardiac dulness increases downwards and outwards.

(d) *Auscultation.*—(1) Systolic murmur in the aortic region. (2) Diastolic murmur heard in the aortic region and carried down to the apex.

(e) *Pulse.*—Collapsing pulse of Corrigan or the water-hammer pulse (2) Slight loss of time between the heart beats and the radial pulse. No difference of pulse beats between the two radials or between the radials and the femorals.

Diagnosis.—From the physical signs and symptoms and from X-ray examination I am of opinion that this is a case of Dilatation; aneurism of the ascending aorta and the aortic insufficiency together with the hypertrophy of the heart are the

secondary results of the aneurism.

Prognosis.—Very grave. He may live for some time or die at any moment.

Treatment.—Rest in bed. Complete avoidance of tea and tobacco. Liquid diet. Bowels to be kept free and the following mixture administered.

Re|

Potas Iodide grs. xv

Cal. Chloride grs. x

Aq. Chlorof ad oz. i

Ft. mist; sig. I oz. t. d.

I started the administration of Potas Iodide with 5 gr. doses three times a day and increased the dose gradually to 15 grains.

MEDICAL ITEMS OF INTEREST.

Radium Therapy in Certain Benign and Malignant Conditions; BY WILLIAM D. JAMES AND ALBERT W. JAMES, *Southern Medicine and Surgery*, July, 1922.

In uterine fibroids radium should, as a rule, replace surgery. However, when operative procedure has to be used in these cases a supra-vaginal hysterectomy is done. This should be followed by radium treatment as the cervical stump is often the seat of future malignancy, which necessitates a total hysterectomy. Other benign conditions which respond most favorably to radium are lupus erythematosus, keloids, moles, and naevi. A warning is sounded against the treatment of moles with radium before there is some evidence of irritation. The greatest field of radium therapy lies in the treatment of

malignant conditions, epithelioma and carcinoma, but one must not make the mistake of considering radium as a panacea for malignancy. Excellent results have been obtained in the treatment of inoperable carcinoma of the cervix, and the hope is expressed that a time will come when radium may replace surgery in operable cases of this type.

The Action of Radium on Cataracts; BY MARTIN COHEN AND ISAAC LEVIN, *Jour. Amer. Med. Assn.*

1. The application of radium to the eye is harmless.

2. There is diminution of lenticular opacifications under the influence of radium.

3. Should a cataractous lens become matured subsequent to radium treatment and should then an operation be required, no difficulties will present themselves.

4. It is therefore advisable to submit a sufficiently large number of immature cataracts with useful vision to a proper course of radium treatment so that a correct estimate of the value of the method may be obtained.

Pernicious Vomiting in Pregnancy BY CARLTON OLDFIELD B.M.J., May 22nd, 1922.

Thirty-five cases of pernicious vomiting in pregnancy have been met with by the author in twenty years' experience. Of these twenty-nine only followed his treatment in every point, and these are the cases which he reports in this paper. The author maintains that pernicious vomiting is neurotic in origin. Patients are placed in hospitals and nursing homes. It is most essential that the nurses employed be in sympathy with the method of treatment. A bowl must not be provided for vomiting, and the words "vomit" and "sickness" must not be mentioned in the presence of the patient. The

diet is a normal one. A rectal infusion of 4 per cent. glucose is usually given, by the drop method. This relieves the thirst and feeling of exhaustion, and, by diminishing acidosis, may lessen the tendency to vomit.

In most cases the results are very satisfactory, when all requisites are met. One of the main difficulties, however, lies in persuading the patient to enter a hospital. After this has been done the treatment is fairly simple. Of the twenty-nine cases treated, vomiting ceased almost immediately in all, and abortion was necessary in only one instance.

Some Common Defects of Diet and their Pathological Significance: Abstract of a lecture by E. Mellanby: Lecture II., B.M.J., May 27th, 1922.

In the first lecture Dr. Mellanby divided foods into two groups. The larger, which included the major portion of the average diet, was practically devoid of sodium, calcium, chlorine, and two vitamins, namely, the fat soluble A. and the anti-scorbutic factor. He stated that in most cases a natural food was better than an adapted one. For instance, sour milk in which the caseinogen had been precipitated and the calcium lost, if used in a diet deficient in fat-soluble vitamins, made resulting rickets much worse.

Experiments were cited to show how butter is deficient in calcium. Animals fed on butter showed the effects of deficiency. The addition of calcium produced some improvement, but the use of cod liver oil as the fat of the diet was much more satisfactory. The cod liver oil was able to utilize all the calcium introduced, and the effects noted were much more striking. The growth which resulted also seemed to indicate that there was a great deal more of the vitamins

present in cod liver oil than in butter. Another striking feature of cod liver oil was its iodine content. Animals fed on it had normal thyroids while animals eating other fats showed very large thyroids. The effect of cod liver oil did not lie entirely in the iodine contents as it was found that the feeding of iodine to animals with exophthalmic goitre had quite the opposite effect to the administration of cod liver oil to the same type of animal.

A rather remarkable effect was noticed in the case of cereals. Dogs, on a diet with olive oil as a fat, and white flour as a cereal, appeared to be fairly normal, whereas dogs which had had oatmeal developed rickets. The explanation of this was not known, but it was also found that a dog brought up on polished rice-plus wheat germ showed worse rickets than a dog brought up on rice alone without the wheat germ.

In the treatment of human rickets children were fed on minced raw meat, potatoes, greens and milk pudding. In addition to these they were given cod liver oil three times a day and an orange. On these diets the rickets were cured.

Oral Sepsis and Systemic Disease: BY W. BERTRAM WATSON, M.D., *THE PRACTITIONER*, June, 1922.

There are two types of oral sepsis: (1) pyorrhæa alveolaris, and (2) apical infection. The former is easily recognised, and, in many instances, micro-organisms from pyorrhæa alveolaris are counteracted by bactericides of the digestive tract. With the second type of oral sepsis, however, it is much more probable that direct infection of the blood stream will result. The site of such infection is not visible, and its existence can only be ascertained by means of radiography. The diseases in which oral

sepsis is thought to play a part are cited, and include: simple and malignant endocarditis, occasionally arteriosclerosis, pernicious anemia, hyperthyroidism, dyspepsia, even appendicitis and gall stones, diseases of the nervous system, in which remarkable results are cited as to the effect of teeth extraction on the mental condition of insane patients, nephritis, certain diseases of the eye, and, lastly, rheumatic diseases. In view of the great importance of a clean mouth and good condition of the teeth, the author urges a closer co-operation between the physician and the dental surgeon.

The Problem of the Radium Therapy of Cancer; By ARTHUR BURROWS, B.M.J., July 8th, 1922.

Radium dosage is fully discussed in relation to various types of tumors and lesions. The number of possible variants in dealing with areas in different parts of the body makes the system of ray treatment very complicated. What is needed is a large number of physical measurements of the different parts of the human body and of pathological growths, and a full and complete investigation of the nature of the lethal dose for cancer cells. With reference to the work done by the Manchester Radium Institute the writer says: "Many cases of carcinoma of the cervix of the uterus, breast, skin, lip, and other regions are in perfect health who would but for radium be dead; while endothelioma of the parotid gland and spindle-celled sarcomata show still more gratifying results. Moreover, short of cure much valuable palliative work is done, while in non-malignant conditions, such as exophthalmic goitre, Hodgkin's disease (when young), keloid, cavernous and capillary naevi, the percentage of cures is high; finally, radium is specific for

excessive uterine hemorrhage and spring catarrh."

Vitamins and the Choice of Food.

Vitamins, or the so-called accessory food-factors, are bodies of unknown constitution, which have never been separated from the foods containing them, and which are, therefore, known by their effects only, and chiefly by the effects produced upon health, when absent from or deficient in a dietary. Modern research and experiment have revealed that there are 3 vitamins in food which have different physiological properties, and produce different kinds of ill-health or disease when deficient or absent in food. The fat-soluble A. Vitamin, as its name implies, is contained chiefly in animal fats (cod liver oil, butter, egg-yolk, etc.), but also in raw cabbage, lettuce and spinach. This vitamin is very essential for young growing animals, as it is concerned in the growth of bone, teeth, and other tissues. Absence or deficiency of Vitamin A. tends to produce rickets in young children and young animals. The milk of grass-fed cows contains this Vitamin, as the green parts of plants are rich in it; but the milk of stall-fed cows (fed on roots, oil-cake and brewers' grains) is very liable to be deficient in it. This Vitamin, in foods containing it, is destroyed by long heating, and by oxidation. Young children should have fresh grass-fed milk, and some butter, eggs, and green vegetables as a daily part of the diet after one year of age. Margarine made from vegetable oils, lard, and olive or salad oils contain no vitamins. The best antidote for rickets is cod-liver oil, not too finely refined.

Water-soluble B. Vitamin is contained in the yolk of eggs, the germ of wheat, yeast (marmite), liver and sweetbreads, fish-roe, and some nuts. Its absence or deficiency in a diet pro-

duces the disease known as Beri-Beri—which has been observed in Eastern races amongst those who live on polished or decorticated rice, the B. Vitamin being present in the husk but not in the body of the rice grain. Water-soluble C. Vitamin is present in vegetables and fruit juices when eaten fresh (lemons, oranges, tomatoes, swedes, cabbage, salad vegetables, etc.). Its absence or deficiency in a diet produces scurvy. Tinned meats, meat extracts, and preserved or bottled fruits and dried vegetables contain none of this Vitamin, and will inevitably produce scurvy if relied upon solely as foods on ships on long voyages or on Arctic expeditions.

OUR GRIEVANCES.

IN U.P.

The following are extracts from the Report read at the Sixth U.P. Provincial Conference of the A.I.S.A.S.'s Association by Rai Saheb Ram Narain Lal, Provincial Secretary:—

Defective Education.—We are labouring under a number of disadvantages which are undermining the very root of the Class, foremost of these being the faulty and defective education of four years which is imparted to us at the Agra Medical School. In Great Britain and all other countries medical education is given for five years; i.e., medical students have to devote four years to academical studies and the fifth year to the clinical work in any public hospital or dispensary, and no student can be ad-

mitted to any degree, diploma or license without going through this fifth year course. The All-India Sub-Assistant Surgeons' Association has been constantly bringing pressure on the authorities to extend the present four years' course to five years, but it is being religiously maintained simply to lower the professional qualifications of its students. And the defective knowledge is later on made an argument for giving smaller remuneration. Fair knowledge of Elementary Biology is most essential to grasp thoroughly the subject of Materia Medica and though it requires only a two and half months' course in the first year according to the regulations of the General Medical Council it is wholly omitted. Are there any valid reasons for withholding it? None whatever. I would not dilate much on the subject but would prove from the communiques of the Government itself that the education which they impart is defective and faulty. You will note in Resolution No 144 of 1914 the following admission by the U.P. Government: "The Medical School, Agra, has rendered and is rendering very valuable services, but its system of training is not keeping pace with the growth of professional requirements among the body of Private Practitioners. There is a very wide gap between a high

qualification of the University degree and a very moderate standard of general and professional education imparted by the Agra Diploma which for private practice is not regarded as equivalent to the L.M. & S. degree of Lahore and Calcutta, and this gap is a great defect in our educational system. The Practitioners demand and their clients demand of them a training superior to what the Agra diploma connotes and if the Government is to expect any widespread extension of medical and sanitary efficiency through its own students, it must arrange to meet their own requirements". Not only this but the Medical Reorganisation Committee appointed by the Government of India is also of the same opinion that the Sub-Assistant Surgeons should have a more complete medical education as will be evident from their report.

Realising the defects and being convinced of its urgency the Government inaugurated the L.M. & S. scheme, which meant in other words a five years' course. This scheme was prepared by Col. E. J. Omeara, L.M.S., who was Principal of Medical School, Agra, for a very long time and who was most experienced to deal with such matters; and, it was prepared in consultation with that great Statesman and a most able

officer of the Government, Col. C. Mactaggart, C.I.E., who was the Inspector-General of Civil Hospitals for a number of years and who felt the pulse of the Class and the nation and hit at the right treatment. Further, the scheme was unanimously approved by the Committee which was appointed to advise the Government. It was after such a thorough deliberation that the Government arrived at the conclusion of giving us five years' education and preparations were made for it. The scheme was unanimously approved by the U.P. Medical Council, which is the only body in the Province at present that can advise the Government on medical matters on sound lines and which represents all shades of opinion.

Most of the reforms required and recommended for the five years' course have since been made, all expenses incurred, but the five years' course has not yet been introduced. It is against the spirit of the Government resolution and in other words a cart has been put before the horse. Can we not pertinently ask as to why lots of extra expenses both recurring and non-recurring have been undergone when the scheme for which it was meant is not to see the light of day?

Much stress has of late been laid on the preliminary educational qualification which is

nothing but a mere pretext to have the scheme in abeyance. For the minimum preliminary education demanded by the General Medical Council of Great Britain before allowing a student to commence medical studies (*vide* Regulations of the General Medical Council, page 13, 1917) is an examination in the following subjects—

(a) English, Grammar, Composition and Literature. Candidates should be prepared to answer questions in History and Geography arising out of the subject matter of the examination.

(b) Latin (or Sanskrit, Persian or Arabic) Grammar, translation into English from prescribed books, translation into Latin from English.

(c) Mathematics, Arithmetic, Algebra including easy quadratic equations, Geometry including the subject of Euclid book 1, 2 and 3 and simple deductions.

(d) One of the following subjects—(1) Greek, Grammar, Translation into English from unprescribed Greek books and *vice versa*, (2) A modern language, *i.e.*, Hindi, Urdu, Mahratti and Gujrati, etc., translation into English from unprescribed books and *vice versa*. No previous examination in Chemistry and Physics is required. It is therefore evident that the S.S.L.C. and the Matriculation

examination of the Indian Universities cover a wider course of study than the minimum required for the recognition by the General Medical Council of Great Britain.

Low Pay.—I do not feel shy in proclaiming from the top of this house that with regard to the question of pay we are treated no better than a serf. It is no use proving here by statistics how adversely we are treated in comparison to other sister services; nor is it necessary to dilate upon the educational and scientific qualifications we are required to possess as they are so well known to you. Suffice it to say that even the abnormal times and the exorbitant famine prices, which forced the hands of the Government to raise the pay of all its officers whether in Imperial, Provincial subordinate or inferior services with retrospective effect from January 1920, were not enough to move the authorities to review the pitiable condition of the Sub-Assistant Surgeon. It is an open secret that Col. Close, our Inspector-General, had already recommended to increase our pay from Rs. 75 to Rs. 200, but nothing has so far happened.

I would simply say that any pay which is given to us should take retrospective effect from January 1920 as has been done for all other services if it is really meant to satisfy the long-felt

grievances of the Class; and secondly I may point out that the Class cannot remain contented till it gets half the minimum and the maximum pay given to the Civil Assistant Surgeons.

Bond System.—In no other country on the face of the earth are medical institutions used as recruiting depots to Government service. Everywhere candidates for Government service are selected by a competitive examination open to all the licentiates and graduates of the country. There seems no valid reason why the same system should not be adopted in India.

The bond which in pre-reformed days was for five years with Rs. 400 as penalty has now been raised to ten years with Rs. 1,000 as penalty. The day you signed the bond your fate was sealed.

This is all due to the present prevailing and corrupt system of giving stipends to the students and thus entangling them for the whole of their lives. This is most undesirable in the interest of the profession and therefore must be put an end to. The number of scholarships might be limited for a few needy and deserving men; I am glad that the Hon'ble Minister of the Central Provinces has promised to do away with this system and I am confident it will not take long for the

Hon'ble Minister of our Province as well to move likewise.

Promotions.—One now sees that the screws of the water-tight compartment are being loosened; but the progress is very very slow and limited. A definite policy should, therefore, be adopted once for all and a certain number of vacancies in the Provincial Cadre should invariably be filled by promotions from amongst the deserving Sub-Assistant Surgeons as is done in the case of practically all other services throughout the Province.

Representations on the Medical Council and State Board.—The representation on these bodies is very meagre and is not at all proportionate to our number in the Profession and the department and we therefore have to suffer a great deal.

I hope that when the State Medical Faculty comes into existence we would be given a thoroughly proportionate and a good representation. We should at least be given two more seats in the Medical Council.

CORRESPONDENCE.

Medical Education.

SIR.—One of the grievances of the Sub-Assistant Surgeons is that there is no uniformity and definite standard in the medical education that is now imparted

in the various institutions of the country. The subject has already been dealt with so often and with such a wealth of facts that I do not wish to dilate on the same here. I wish to draw the attention of those concerned to the sentiment prevailing in some enlightened countries regarding this question. The *American Physician*, discussing the question whether "our forced standardization and multi-specialist type of education is providing the Medical Service the people needed", says thus:—"Considered from the standpoint of the doctorate, medical standards are low at present, but considered from the standpoint of training for a man to begin medical practice, the present standardization is top-heavy. Even a four years' course in medical schools is utterly inadequate to cover the subject completely". If in a country like America where the standard of medical education is already so high and so efficient, it has been found necessary to give expression to the above sentiment, how much more has to be expressed regarding what obtains in India, where arbitrary and inefficient standards are laid down for medical education! I hope and trust that the authorities here will not fail to look at the question from a broader standpoint and to introduce, at the earliest possible opportunity, such altera-

tions as are necessary for removing the present defects.

MEDICO.

OUR ACTIVITIES.

Baroda.—Meeting held at the Jannabai Dispensary at 5-30 P.M., on the 29th October, 1922. Ten members were present.

A paper was read by Mr. A. J. Anjaria on "Present position of Sera and Vaccines in the treatment of some diseases."

Resolved that the Chief Medical Officer be requested to give effect to the last revised scale of pay of the Sub-Assistant Surgeons in the service of the State as sanctioned by H. H. the Maharaja Saheb with the minimum of Rs. 75, and to move His Highness' Government to raise the maximum to Rs. 200 following the examples of the Bombay Government.

Shillong.—Meeting held at Shillong Dispensary on the 19th November, 1922. Eight members were present.

Proceedings of the last meeting were read and confirmed.

Letter dated 31st October 1922 from the General Secretary, All-India Sub-Assistant Surgeons' Association, was read.

Resolved that a copy of the memorial which was submitted to Government be sent to the General Secretary, in response to his letter mentioned above.

Resolved that this meeting on behalf of the Sub-Assistant Surgeons of Assam begs to congratulate Lt.-Col. H. Innes, M.D., I.M.S., on his appointment as Inspector-General of Civil Hospitals, Assam.

Resolved that the following office bearers be elected.

President.—Sirdar Shaheb Subedar Zarwar Singh.

Vice-President.—Mr. Pulin Behari Das.

Secretary.—Mr. Narayan Chandra Das Gupta.

Assistant Secretary.—Mr. Sura Kumar Datta.

Members of the Executive Committee.—Messrs. (1) N. N. Dam, (2) S. C. Mukherjee, (3) B. Diengdoh, (4) Anukul Ch. Das Gupta, and (5) Miss Thomas.

Resolved that Rai Shaheb Dr. J. M. Bose be elected as delegate for the ensuing Annual Conference of the All-India Sub-Assistant Surgeons' Association.

Resolved that the rank of Hon., Lt., and Capt. be given to the selected members of the Military Sub-Assistant Surgeons permanently, at least 2 per cent. of the strength, as these ranks have been given to the members of the I.M.D. of the Sub-Assistant Surgeons' branch for long and distinguished service at present; and that the above resolution be moved at the ensuing Annual Conference.

NOTES AND COMMENTS.

In the course of a contribution to the *Practitioner*, Dr. Forsdike enumerates a long list of possible causes of sterility, for the most part in the female, and gives directions for their treatment after careful examination and exact diagnosis. Those most frequently encountered are persistence of undeveloped organs; altered secretions of the genital tract, including vaginitis and cervicitis; gross lesions of the tract, among which trauma and fissures may cause dyspareunia, and tumor may obstruct; vaginismus; and disturbances of the internal secretions. Leucorrhea, causing excessive acidity and so destroying the germ before penetration, is a common source of sterility to be remedied by saline douches. In cases of obesity with amenorrhea, where thyroid extract fails to restore function, the author, it is mentioned, sometimes succeeds by administering Hormotone and says that ovarian extract appears to be useless alone.

We have been favoured with a copy of the "Annual Returns of the Hospitals and Dispensaries in Behar and Orissa for the year 1921," from which we find that the number of hospitals and dispensaries in the Province has increased from 434 to 454, the net increase in number being 20

against 6 in the preceding year. It is also gratifying to note that attention has been paid to the question of increased medical aid by the starting of Travelling Dispensaries and by the establishment of Dispensaries in rural areas. "It is gradually hoped", says Col. H. Austen-Smith, Inspector-General of Civil Hospitals, in the Report, "to carry through the ideal scheme of having a dispensary for each Thana, or for an area of each five square miles, in which area the Medical Officer of the Dispensary will be responsible for the sickness in his area". There are some passages in the Report which are of special interest to the Sub-Assistant Surgeons. Referring to the question of medical relief in rural areas Col. Austen-Smith says that "one of the difficulties at present is the supply of doctors

of the Sub-Assistant Surgeon class who at present prefer to avoid Government service". "I think", he continues, "that in the near future the provision of an adequate rate of pay for the Sub-Assistant Surgeon Class must be faced, for recruitment at present is a matter of great difficulty and the cadre is always under strength". And he concludes his Report with the following observation:—"I should like to see the pay and prospects of Sub-Assistant Surgeons in this Province improved, as they are a deserving body of Government servants and I wish to see them a contented service". We are thankful to Col. Austen-Smith for these sentiments, and we trust that the question of an adequate increase of pay to the Class in Bihar and Orissa will be a *fait accompli* very soon.

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The All-India Sub-Assistant Surgeons' Association.

Statement of Accounts for the Month of August, 1922.

Dr.	Rs. As. Ps.	Cr.	Rs. As. Ps.
Balance brought forward from last month's account ..	16,110	1	10
By subscriptions from old and new members including admission fees ..	94	0	0
Advertisement ..	21	4	0
			Postage and Telegrams .. 75 12 3
			Stationery .. 14 13 6
			General Charges .. 3 0 0
			Establishment .. 132 0 0
			Rent .. 23 0 0
			Furniture .. 9 0 0
			Printing charges of the Journal .. 1,947 9 0
			Total Rs. .. 2,207 2 9
Total Rs. ..	16,225	1	10
			Balance R. .. 14,017 13 1
			Grand Total Rs. .. 16,225 1 10

SURJOO PRASAD,
RAI BAHADUR,
General Secretary.

INDORE RESIDENCY,
25th Oct., 1922.

G. D. KHANDEKAR,
M. C. P. S.,
Treasurer.

JOSEPH BENJAMIN,
Chairman,
Finance Committee,
9th Nov., 1922.

Statement of Accounts for the Month of September, 1922

Dr.		Rs. As. Ps.		Cr.	
Balance brought forward from last month's account		14,017	13	1	
By subscription from old and new members including admission fees ..		90	8	0	
Total Rs.		14,108	7	1	
				</	

SURJOO PRASAD,
RAI BAHADUR,
General Secretary.

INDORE RESIDENCY,
25th Oct., 1922.

G. D. KHANDEKAR,
M. C. P. S.,
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THE Indian Medical Journal

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MEDICAL INSPECTION OF SCHOOL CHILDREN.

It is regrettable to observe that, in spite of the incontrovertible fact that the medical inspection of school children is a question of paramount importance to the health and vitality of any nation, there are persons who, when occasions arise for promoting the cause, if not being actually lukewarm and indifferent, do not, at any rate, display that amount of earnestness and enthusiasm which the cause so imperatively demands. The discussion that was carried on at a recent meeting of the Madras Corporation when the recommendation of the Standing Committee regarding a scheme of Medical Inspection of Children in all elementary

schools in the City came up for consideration, is an instance in point. There was a long discussion and several councillors, we find, took part in the same. Eventually it was resolved to refer the matter back to the Health Committee to give a definite report in the light of the discussion that took place and with the proviso that no money should be spent. We must confess to being surprised that, after all, in a matter of so much importance, a more prompt and more practical decision could not be arrived at by the Corporation. In every enlightened country the medical inspection of the future citizens of the State is a

matter that has long been in the fore, and we find up-to-date and very efficient measures being taken. Even lay observers cannot fail to note that the health of the majority of the school-going population is not what it ought to be. A technical inspection, however, will reveal a more serious state of affairs. As was observed by the Royal Commission on physical training, "it is the large number of *serious and minor diseases* directly and indirectly affecting physical and mental efficiency that constitutes an overwhelming case for the medical inspection of school children." "The dangerously enfeebled organ that no doctor is ever asked to treat, the slightly enlarged gland that is preparing the way for tubercle, the slightly consolidated lung that in a few months will pass to acute phthisis, the slight recurrent cough that points to feebleness of mucous membranes, the slight 'pigeon chest' that points to respiratory insufficiency, the slight deafness that tells of chronically inflamed tonsils, the slightly opened mouth that tells of obstructed nasal passages, the turn of head that follows on perforated ear-drum or astigmatic eye, the resting of one foot on another that presages hip-joint disease, the clubbed fingers, the cold hands, the blue cheeks, that all hint of bad circulation—

these and the infinite variations of these and others do not normally attract the attention of even careful parents, and these are seldom, if ever, made the occasion for calling in a doctor". Under these circumstances, to leave the question of an early and proper medical inspection of school children in the hands of the parents is to rely on the impracticable. Nor is it right to imagine that the teacher will detect such cases and make reports to the parents. The only way, therefore, in which the question can effectively be solved is to have a definite programme of inspection by skilled medical men and the arrangements whereby those that require treatment can be attended to. This is what is done in Europe, America and Japan, where such a programme is producing glorious results. The problem is graver in India, where various conditions contribute to the spread of diseases among school children; and it is all the more necessary, therefore, that very effective measures should be adopted here. The authorities have got a grave and serious duty to discharge in this connection, and no amount of excuse on financial or other considerations will exonerate them of the blame that will rest with them if they ignore or shirk their responsibility.

THE PRESENT POSITION OF SERA AND VACCINES IN THE TREATMENT OF SOME DISEASES.

By A. J. ANJARIA,
S. A. S., State General Hospital,
Baroda.

OF late the treatment of diseases by Sera and Vaccines has been making such rapid strides that it will be interesting and instructive to take stock and see what they are worth in some diseases.

Tetanus.—The War has given unprecedented opportunities to test the value of anti-tetanic Serum as a prophylactic. Very large number of wounds during the war were contaminated with tetanus Bacilli and therefore its use as a prophylactic was made general. This procedure has proved beyond the shadow of doubt the efficacy of its value as a prophylactic. It has reduced the mortality to a great extent. If used in time, in sufficient quantity and at regular intervals, the development of tetanus would, in a great majority of cases, be an impossibility so long as normal health is maintained. The incubation period is very short and therefore it should be used very early. In large wounds which are very septic it is necessary to use the serum three or four times. Though it is necessary to use the serum very early,

even its late use is not without some advantage. The question of anaphylaxis seems decided. Frequent injuries and easily failing securities required frequent use of the serum both as curative and preventive. The result showed that the danger of giving serum is, if not purely imaginary, almost nil. It is safer to stand anaphylaxis than to risk the disease. As the tetanus bacilli lie dormant till favourable opportunities occur to become active, it was proposed to produce immunity by inoculating anti-bactericidal serum as the prophylactic effect as stated above does not last long. This experiment is still under trial and no decisive result is yet known.

Curative.—The anti-tetanic serum as a curative agent has not proved to be of much use. The best method subcutaneous or intravenous—has not yet been decided. But all agree that serum to be of any use should be used as early as possible and in large quantity.

Typhoid fever.—Like the anti-tetanic sera the typhoid vaccine was largely used in the recent war among the armies of all the nationalities as a prophylactic. Its sterling worth is now admitted. The curative treatment of Typhoid fever either by vaccines or sera has not made headway.

Influenza.—Prophylactic treatment of influenza is proposed and

practised; but as the agents causing the disease have not been definitely known it is quite obvious that notwithstanding its use by some enthusiasts its utility cannot be accepted by the medical world.

Pneumonia.—When serum treatment in diseases like tetanus and typhoid which are caused by specific organisms has hitherto failed to do any good, it seems hardly possible that serum therapy would prove useful in a disease like pneumonia which is caused by not only types and strains of pneumococci but by Streptococci, Staphylococci and number of other organisms. Later observations have shown that there are four different groups of pneumococci which can be separated and distinguished by their serological reactions, each type not only showing its peculiar characteristic but also considerable differences in clinical manifestations of infection. It is also seen that the types of pneumococci differ in different localities. Thus it will be seen that the use of sera is beyond the range of a general practitioner; to use it properly and effectively it is necessary first to make out the offending agents in a particular case and then to use the sera which are specific. Those who claim good results from serum treatment in pneumonia say that they succeed when the infection

is caused by the Type (1). When we take into consideration the mixed infection we think that the successful use of serum in different infections is not possible in the near future. Polyvalent serum may solve the problem. But with all this in it lies the hope of a successful and scientific treatment of pneumonia.

Bacillary Dysentery.—The prophylactic treatment of dysentery is unsatisfactory. The curative treatment by serum though of much promise has still not proved to be very effective in curing the disease. Those who claim to have got better results recommend its use, subject to certain conditions. It is agreed that the serum is useless when the stage of dehydration and profound intoxication occurs. It is only useful if given in the beginning, before five or six days. Here too it should be used intravenously. But before it can be successfully used, the method now in vogue for the preparation of the anti-dysenteric sera will have to be modified. The polyvalent serum as at present prepared and used is unsatisfactory as it may not be strictly specific, for the actual number of dysenteric groups as possible for the infection of Shiga cases should receive an anti-shiga serum and in Flexner cases the appropriate serum is required. If sera appropriate to the particular

kind of infection could be prepared it would not only avoid the necessity of injecting large quantity of polyvalent serum but it would in small quantity adequately neutralize the specific toxins of the infecting organisms.

Cholera.—The prophylactic treatment of Cholera has proved effective in the recent European War, but as a curative agent has not made any progress. It is hoped that its use as a prophylactic will be as general as that of Plague.

Plague.—The prophylactic use has become so general that it is not necessary to prove the already proved fact. Curative serum has woefully failed.

Whooping Cough.—The vaccine treatment is in an experimental stage and therefore its evidence is inconclusive, but it holds out hope for the future.

Cerebro-spinal Fever.—The treatment of this disease by serum and vaccine has proved so colossal a failure that the physicians now resort to the old tried remedy—frequent withdrawal of cerebro-spinal fluid by lumbar puncture. The prophylactic use of the vaccine shows encouraging results.

Conclusion.—From the above short review, it will be seen that this line of treatment, though successful in preventing certain diseases (not a small gain), has,

as far as the curative value is concerned, fallen far short of our expectations. Further experience has, instead of simplifying the method of preparing appropriate sera and vaccines in view of different strains and types of causative agents, opened up a vast vista of other difficulties. Much patient work is required before this line of treatment takes a definite shape in the armament remedies.

ADMINISTRATION OF QUININE.

By J. V. GADRE,

Civil Dispensary, Morar.

When it has been decided to give quinine to a particular case, it requires great tact to administer it successfully. We often hear patients coming to us with a tale that they have taken a lot of quinine and that they are not yet free from their ailment. Generally the bitter taste of quinine, idiosyncrasy, the popular belief that quinine is injurious probably due to symptoms of cinchonism, bilious temperament, and pregnancy are great impediments to the successful administration of quinine. Usually quinine is given as pill, powder, mixture, injection or enema. A free purge of calomel or any other cholagogues should always precede the administration of quinine. The pill must be freshly made, preferably with

some water and a little Tartaric Acid. It is my belief that pills or Tabloids often pass away unabsorbed and hence practically of no use. The only good way of giving powder is to give it in an effervescent form either with soda and acid or with fruit salt. Powders are often given for children in wafer papers or cachets, but even this method is found to fail. The powder is often given with honey, treacle or syrup in children. The only effective way is to give quinine in a dilute solution or mixture; a solution made with fresh lemon juice is a cheap method of great use. In an ordinary case without any complication, ordinary quinine mixture is all that is required. But when the digestion is not normal and the power of absorption and assimilation is deficient the question becomes extremely difficult. In children in whom liver enlargement is often met with, the case becomes still more complicated. Tincture Warburg is very useful in such cases, especially when there is no intermission of fever. It contains quinine sulphate in the proportion of one in 50; hence the dose of quinine can very well be regulated. Besides, it contains Aloes and Rhabarb which move the bowels and thus assist in the absorption of quinine. I have found in my practice that very often only a

few doses of 10 or 15 M. of Tincture Warburg check the fever when it is not amenable to other methods of administration. In adults in cases of deficient absorption I prescribe the following mixture:—

Pot. Chloras gr. 5
Mag. Sulph. 1 drachm.
Acid Hydroch Dil m. 10
Quinine Sulphas grs. 5
Aqua ad 1 oz

The mixture usually sets matters right in a day or so. According to Whitt, Pot. Chloras has alterative and stimulating influence on the mucus membranes especially the intestinal. This probably accounts for the better absorption of quinine in the above mixtures especially when it is combined with Mag. Sulph. In cases where diagnosis lies somewhere between remittent fever and typhoid or paratyphoid and when no microscope is available, there is no other medicine than Chlorine mixture. No doubt it is an unpalatable medicine but I give it with equal quantity of orange syrup and I am glad to state that all my patients take it without any complaint. The main thing is to attend to its preparation carefully. It is required to be made in blue or amber coloured well-stoppered bottles which must be kept inverted. In about two days' time it gets useless and is required to be freshly prepared. When there

is great biliousness or gastric irritation and nothing is retained by the stomach or when all the above methods have failed I depend on injections. My practice mainly being out door, I mainly depend on subcutaneous method. I have no experience of either intramuscular or intravenous method. The subcutaneous, no doubt, is a useful method but it has got certain objections. The injected part often swells and is painful for a few days. In some cases knots remain at the seat of injection for months or years. In a few cases suppuration takes place, when the vitality is very low. I invariably boil the fresh solution before injection and so far I have not come across any complication such as Tetanus. It is a sad experience that some ignorant patients do not submit to injection at all. Some Doctors think that the quinine which is generally injected is acid and the blood serum alkaline, and hence it is deposited in the tissues and not absorbed at all and that accounts, in their opinion, for the knots and the irritation of tissues often seen. I cannot say whether this belief is true because in practice subcutaneous injections are useful and hence quinine must be absorbed in some way or other. Another important point is that Quinine is required to be pushed before the

desired results are obtained. I have given in a few cases as many as 60 grs. in 12 hours. Tinct. Quinine Ammoniata is another way of giving Quinine. It has given excellent result in my hands when given in the beginning of cold. In pregnancy I never withhold quinine, but I always give it in small and repeated doses guardedly. It has worked well in my hands and I am inclined to think that malarial poison is likely to do more harm than quinine in pregnancy. I mention below a few cases in which quinine was found to disagree. In some there was gastrointestinal irritation, so much so that after giving only one dose the patients were vomiting and passing stools whole day producing alarming symptoms. In some immediately after a dose there was an urticarial rash all over the body with severe itching. The itching was unbearable and made the patient uneasy the whole day. In some there was tremor of muscles so that the patient found it difficult to work.

SLEEPLESSNESS IN INFANTS.

By CHARLES E. SUNDOLL,
M.D., M.B.C.

*Physician to the Indiana
Hospital for Children.*

A child's life rests upon the tripod of food, warmth, and sleep. Serious interference with any one

of these disturbs the others and endangers the child's existence.

It is important to realize what large periods of sleep are necessary to a child's health. Of the first seven years of a human being's life, four and a half are spent in sleep; of the twenty-four hours of the day, the new-born infant sleeps for twenty-two, the baby of six months for eighteen, and the child of four years for fourteen. While the child has no natural power of concentration—this has to be acquired as a result of education and training—he has, in a degree far superior to that of the adult, the power of relaxation; this shows itself in the acrobatic contortion of limbs, in the sudden change of interest from one object to another, but in nothing more clearly than in the capacity, shared with puppies and kittens, for suddenly dropping off to sleep.

For the child there is no true insomnia, no weary waiting for sleep to come; it is natural for a child to sleep readily and easily, and any change in the natural habit is to be ascribed to some disturbing factor foreign to his normal routine. A sleepless baby is a reproach to his guardians, and convicts them of some failure in their guardianship. In one type of disease only is there spontaneous failure of the sleep-habit—grave mental impairment such

as is seen in Mongols or the hydrocephalic—apart from some such brain-defect, wakefulness in a child means that some removable cause is disturbing or preventing a natural tendency. In the search for what this cause may be, the first step is a visit to the nursery. Interrogation of the mother or nurse in the consulting-room is often barren of result, whereas a nursery visit at bedtime may yield the clue to the problem at once.

It is well to bear in mind that the cause for a baby's wakefulness is most often a simple one, and simple causes should be sought for first. Attention to the temperature of the cot and of the room, screening of lights and avoidance of clatter or loud conversation, are so obvious as to require nothing more than mention. Most common of all are the discomforts of the gastro-intestinal system—flatulence, colic, hunger and, what is so apt to be overlooked, thirst; many a child cries in the night for a fluid, and is given instead the makings of a lump of casein-curd. It is always worth while giving a wakeful child a drink of water; it is seldom refused, and often satisfies.

There is a certain practice deeply rooted in the minds of all women as an unfailing cure for a baby's sleeplessness, namely, rocking. Rocking is unnecessary,

but the baby first likes it, then he expects it, and very soon he begins to demand it and will not go to sleep without it. When this stage has been reached the misguided mother finds that she has forged fetters for herself which are extremely hard to break. While gentle rocking of an infant is only indirectly harmful, the same cannot be said of the vigorous tossing up and down to which some unhappy babies have to submit: as a method of producing wind such treatment is ideal. The doctor who derides rocking of prams and babies has to meet strenuous opposition from parents and nurses, but if he carries his point the day soon comes when they will turn in their sleep and call him blessed.

Some nurses unworthy of the name have a habit of ensuring freedom from disturbance of their own rest by giving young infants sugar balls (*i.e.*, muslin bags containing sugar) to suck; it is well to be alive to this, but detection may easily be delayed till the absence of the nurse removes this solace from the infant and otherwise inexplicable restlessness commences.

Two other causes of wakefulness must be borne in mind—irregular habits, and excitement while awake. The temptation to postpone the time for a baby's sleep, so that he may be admired by some relative or friend who

is late in arriving, or so that his nurse may finish some work on which she may be engaged, must be strongly resisted. A sleepy child who is kept awake exhausts his nervous energy very quickly in peevish restlessness, and when preparations are at last made for his sleep he may be too weary to settle down. Physiological proof of this indisposition for slumber is to be found in the increased reflex-irritability of a sleepy child, an irritability which is soon soothed into sluggishness should sleep be not too long delayed, but which persists and increases if the balm of sleep is withheld.

Regularity of habits is one of the sheet-anchors by which the barque of an infant's health is secured. The re-establishment of a regular routine, after even a short break, frequently calls for patient perseverance on the part of the nurse, but though the child may protest vigorously for several nights, absolute firmness seldom fails to procure the desired result. Excitement during waking hours is a common cause of restlessness at night. A baby should be regarded much more as a vegetable than as an intelligent human being; intelligence develops quickly and spontaneously, and attempts to force its display by the antics of onlookers are harmful.

The cases of sleeplessness which will not yield to simple treatment

on the lines indicated are few, but when wakefulness has been allowed to become a habit treatment by drugs may be necessary. Drugs should only be resorted to when all other means have been tried and have failed. Administration of a hypnotic to an infant must be strictly reserved for the really exceptional case, and should be regarded as a last resource. Our aim should be merely to re-establish the normal habit of sleep in the child. This aim is best attained by employing drugs in a descending scale of dosage. A really adequate dose should be given the first evening, so that the child is certainly sent to sleep; the rest thus obtained will make him more ready for sleep the next night, and half the initial dose should then be given. On the third evening a quarter-dose should suffice, and on the fourth evening no drug at all should be necessary. For a four-months infant, 4 grains of ammonium bromide with 12 minims of syrup of chloral would be a suitable dose; for a child of six months, 3 minims of chloral might be added with advantage. Synthetic sedatives are unsuitable for young infants, and opium with all its derivatives is dangerous; the only possible justification for its use is the intense pain of an acute affection such as otitis media, and in such a case it can only be regarded as

a temporary measure of relief and secondary in importance to direct treatment of the cause of the pain. Success in the treatment of sleeplessness in infants is a good standard by which to estimate the patience and skill of the practitioner. —*The Practitioner.*

TRACHOMA.

By F. A. NEWMAN, M.D., B.S.,
(M.L.B.), D.O., (OXF.),

Honorary Ophthalmic Surgeon,
St. Vincent's Hospital,
Melbourne.

It is with a certain amount of diffidence that the somewhat unorthodox views expressed in this short paper on trachoma are put before you. Two aspects will be considered: (i) the subepithelial site of the disease, and (ii) its pathology. An attempt will be made to question some of the methods of treatment at present in vogue and to plead for less energetic measures.

Although the specific organism has not yet been discovered, trachoma is now recognized as a chronic infective disease affecting the subepithelial adenoid tissue of the conjunctiva. It usually begins in the lower fornix, it may spread to the upper, the tarsal plate and in some cases to the limbus and cornea.

Its pathology is very similar to another chronic infective disease, viz., tuberculosis. In each the

focus of infection, acting as a mild irritant, sets up a chronic inflammation and calls mainly on the local defensive mechanism of the tissue cells.

THE DEFENSIVE MECHANISM.

The local cells involved in the process are: (a) endothelial cells from the lymph spaces, small blood vessels and lymphatics; (b) lymphocytes which are formed by proliferation of the local lymphoid tissue. These cells in trachoma infiltrate the subepithelial conjunctival tissues and in places are aggregated into clusters forming the follicles characteristic of the disease. Later on the central cells of the follicles may be absorbed or degenerate; fibrous tissue, which gradually contracts, forms in the periphery of the follicle, whilst the central cells or their degenerated remains are either absorbed or extruded on the conjunctival surface until ultimately the follicle disappears and is replaced by scar tissue, so that, as in tuberculosis, there is always a certain amount of destruction of tissue, the amount being proportionate to the extent of degeneration of the central cells. Unlike tuberculosis, the central cells do not undergo caseous degeneration and giant cells are not formed. The neighbouring lymphatic glands are not affected and no rise of temperature has been recorded. In each

case Nature builds slowly a barrier around the organisms. No doubt many organisms are destroyed by the local phagocytes without the necessity for barriers, their formation depending on the virulence of the organisms or lessened resistance of the tissue or both.

In both diseases, by the time a case is recognized clinically the organism has got many months' start, the clinical manifestations being the reaction of the tissues against the invasion.

There are some other points of resemblance between tuberculosis and trachoma. Both are in the great majority of cases chronic diseases; acute trachoma is described, but the view generally accepted is that it is a superimposed pyogenic infection on the chronic disease, just as in tuberculosis the presence of pyogenic organisms may increase its virulence. It is clinically recognized that trachoma is more contagious when pyogenic infection is present.

Both are more frequent in those who live under bad dietetic and hygienic conditions. Probably a lowering of the general health is as essential for the establishment of trachoma as it is for tuberculosis. Both are only slightly contagious and occur more often in childhood than in later periods of life.

Again, many cases of both diseases run their course without the patient being aware of their presence. It is not uncommon to see evidence of healed trachoma in the shape of scars on the conjunctival surface of the tarsal plate and yet the patient has had very little inconvenience with the eyes.

Probably in these cases the central cells of the follicles have not degenerated or, if they have, have been absorbed without the follicle bursting into the conjunctival sac.

In uncomplicated cases Nature does not use the polymorphonuclear leucocytes formed in distant parts, but any acute irritant, whether mechanical, as expression, scarification, chemical, as caustics, or organic, as pyogenic infection, will at once call up the whole defensive mechanism of the body and will result in an acute inflammation. There will be definite leucocytosis, possibly supuration and necessarily greater involvement of the surrounding comparatively healthy tissue and as a result the formation of a large amount of scar tissue.

The conjunctival epithelium proliferates and thickens; there is increased secretion of mucus and this in pure cases is the only discharge. Muco-purulent discharge is evidence of a superimposed pyogenic infection. In old

severe cases, especially those in which there has been a large amount of scar tissue formed, the epithelium atrophies, the cells undergo keratinization, the mucus-producing goblet cells of the conjunctiva are destroyed and that incurable condition, *xerosis*, ensues. The epithelium is the first line of defence, so it is important to preserve it intact in as healthy a condition as possible and not to apply anything which interferes with its nutrition, thus lessening the liability to pyogenic infection and extrusion of the contents of the follicles.

The tarsal plate may be affected later, the disease spreading from the fornices. Follicles form and the plate becomes infiltrated with inflammatory products and softened, consequently it is easily distorted. Apart from *pannus* and *xerosis*, all the conditions which so materially interfere with vision are due to distortion of this plate.

Probably in the future trachoma may be found to be a much more prevalent disease than we at present imagine and in a great many cases it may be found that the disease never gets beyond the fornices. If it is so limited, no complications or sequelæ are likely to occur, as in the great majority of cases these are secondary to the disease attacking the tarsal region.

PATHOLOGICAL BASIS OF TREATMENT.

In treatment the following points seem to be important:

(1) To rest the part as much as possible. We know the importance of resting any tissue infected with tuberculosis. By rest we aim at lessening the extent of degeneration in the central cells, consequently a smaller amount of tissue is destroyed and less scar tissue is formed when cure results.

(2) The disease affects the subepithelial tissues. It is therefore important to preserve the epithelium intact. The nutrition of the epithelium is already disturbed by the inflammation and when the portion over a follicle is destroyed, either by the follicle bursting naturally or as the result of irritants or trauma, it is impossible to prevent the opened follicle becoming septic. We know that when a pyogenic infection is mixed with a tuberculous one, the latter becomes more virulent. It is suggested that the same occurs in trachoma. If this is so, it seems important to maintain the epithelium intact.

(3) It is chronic. Where follicles have formed, there will certainly be destruction of the tissue attacked, which is replaced by scar tissue.

(4) The surgeon is working in a limited field, where every extra

millimetre of scar tissue means more distortion of the tarsal plate, with increased risk of complications and sequelæ.

That the treatment of this disease is at present decidedly unsatisfactory we can easily convince ourselves by a visit to a few hospital clinics, where we see patients, some after years of treatment, with considerably impaired vision, the result in many instances of preventible sequelæ. Most surgeons, even if the diagnosis is made in the early stages, immediately apply treatment with the object of destroying the follicles. We may ask ourselves: "Is this treatment based on a proper conception of the pathology and site of the disease?" We believe it to be an infective disease; if so, then the follicles, by enclosing the organisms, are the reaction of Nature against them.

The usual form of treatment consists in washing out with a lotion and trying to destroy the follicles by chemical (copper sulphate, silver nitrate or strong perchloride) or mechanical means (scarification, expression, rubbing with sandpaper, etc.). The effect produced by caustics depends on their strength and the length of time they are in contact with the tissues. When strong ones, such as copper sulphate, strong solutions of mercury or silver nitrate, are employed, some

of the epithelial cells will be killed and cast off as a slough. This means a certain amount of acute inflammation in which the polymorpho-nuclear variety of leucocyte predominates, yet Nature does not use this variety in attacking the organism. It has been suggested that the beneficial effect of caustics is due to phagocytic action of the polymorpho-nuclear variety, but the acute inflammation set up by each application causes a greater and more rapid formation of scar tissue than would occur in the absence of irritants, with resultant greater contraction of the conjunctiva and deformity of the tarsus.

The intermittent application of irritants causes proliferation of those epithelial cells which are not destroyed. The ultimate result of this, aided by the excessive formation of scar tissue, is interference with their nutrition and atrophy.

The goblet cells do not then secrete mucus which helps to lubricate the conjunctiva; resistance to infection is lessened; the conjunctival epithelial cells, deprived of their secretion, undergo keratinization and in extreme cases xerosis is produced.

However carefully the application of the caustic may be carried out, it is almost impossible to prevent some of it getting on to the cornea and interfering with

the nutrition of its epithelium; it thus acts as a predisposing cause to infection of that structure.

Another bad effect of caustics is associated with the intense blepharospasm their application causes. This lasts a considerable time and is continued in a modified degree as the result of subsequent inflammation. All this means excessive action and consequent hypertrophy of the *orbicularis* muscle.

If we watch normal lids when squeezed tightly, we notice the skin of the lids thrown into a series of folds in such a manner as almost to obscure the bases of the eye-lashes. Probably they would invert were it not for the tarsus, which also, by its resiliency, is a factor in causing the lid to resume its position of rest on relaxation of the *orbicularis*.

The *orbicularis* may be compared to a sphincter muscle; when it contracts, it diminishes the interpalpebral aperture, both vertically and horizontally. Even the narrow strip of the plate left after partial tarsectomy seems sufficient to prevent inversion of the lashes.

Now in trachoma the tarsus is swollen and soft, its resiliency destroyed by inflammation; consequently it will not stand the stress of severe muscular contraction. It is suggested that excessive action of the *orbicularis* on a

tarsus in this state aids materially the contraction of the scar tissue in producing deformity. The normal well-defined posterior-inferior border of the tarsus becomes rounded and the eye-lashes being inserted into the eye-lid anterior to the tarsal plate, slip round it, as it were, producing entropion and trichiasis.

In the majority of advanced cases of trachoma there is noticed a narrowing of the transverse and vertical diameters of the interpalpebral aperture and a certain amount of drooping of the upper lid. The hypertrophied *orbicularis* is probably a factor in producing these conditions, aided possibly to a certain extent by atrophy of the opposing elevator muscles, the drooping of the upper lid being not due entirely to thickening, the result of the disease.

THE SIGNIFICANCE OF THE FOLLICLES.

When mechanical means are used to destroy the follicles, the conjunctival epithelium is destroyed. The follicles are opened; Nature's barrier is removed; the enclosed organisms are set free in the conjunctival sac; pyogenic infection is inevitable. An ulcer is formed. There always follows severe acute inflammation, with the formation of a large amount of scar tissue, so that the risk of distortion of the tarsal plate is

increased and the cornea, instead of being in apposition to mucous membrane, has rough scar tissue rubbing against it, acting as a continual irritant to its epithelium.

Apart from *pannus* and *xerosis* the dangers to vision are due to the sequelae coincident with distortion of the tarsal plate, viz., entropion and trichiasis. Obviously, if we are to prevent them, the aim of treatment must be:

(1) To prevent overaction, with consequent hypertrophy of the *orbicularis*.

(2) To prevent the formation of an excessive amount of scar tissue and try to preserve the conjunctival epithelium over the follicles on the tarsal plate, so that when recovery occurs, smooth epithelium and not hard, rough scar tissue will be in contact with the cornea.

Pannus is due to the disease attacking the cornea superficial to Bowman's membrane. In the great majority of cases it comes on after the tarsal region is affected. Spreading from the limbus, it may extend all over the cornea, but it is generally limited to that part which is covered by the upper lid when the eye is open. It is suggested above that caustics, etc., predispose to this complication by lowering the nutrition of corneal epithelium and that the roughened lid

factor. In support of this view is the fact that after removal of part of the tarsal plate, *pannus* generally clears up quickly. It will also generally clear up with the tarsus present, if both eyes are bandaged for about two weeks, the bandage being taken off only three times daily for irrigation of the conjunctiva. The writer adopts bandaging and irrigation if *pannus* does not clear up after partial tarsectomy. Pyogenic infection contraindicates bandaging and it should only be resorted to when the patient can be kept under strict observation.

In the cases where it was tried without partial tarsectomy the *pannus* cleared up, but recurred as soon as the bandages were left off.

In this complication, the cornea being avascular, loops of blood vessels are sent across it from the conjunctival vessels at the limbus to combat the disease. Again treatment is questioned; peritomy is done. The aim of this operation is to cut off the blood flow in the vessels Nature has expressly sent out to combat the disease. The vessels will quickly shrink once the cause for their being there is removed, and with their shrinking, the cornea generally returns to normal, except when Bowman's membrane is implicated, permanent scars will remain.

If any operative interference is deemed necessary on the conjunctiva in the region of the limbus for the treatment of *pannus*, after removal of part of the tarsal plate probably the wisest procedure would be to separate the conjunctiva right round at the limbus and to draw it forwards by a purse-string suture, so as to cover the cornea completely. When the suture is removed, the conjunctiva gradually retracts.

Usually it seems the wiser plan to interfere with the bulbar conjunctiva as little as possible.

If a patient with trachoma is seen early, the treatment suggested is local cleanliness of the conjunctival sac by irrigations with saline or mild antiseptic solution used freely at least three times daily, followed by weak antiseptic drops, such as resorcin and zinc sulphate, the wearing of protective glasses in sunny weather, correction of any refractive error, avoidance of near work. Irrigation of the lachrymal sacs with a weak solution of zinc sulphate two or three times a week is a great help. Any abnormal nasal condition or source of septic infection, such as bad teeth, septic tonsils, etc., should be attended to. The hygienic and dietetic treatment suitable for tuberculous patients are also suitable for trachomatous patients; an atmosphere free from flies, dust and smoke is essential.

PRESERVING NATURE'S BARRIERS.

In both diseases the object is to try to cause scarring with the least possible destruction of the affected tissue. This is best attained by not irritating or destroying Nature's barriers, but by dietetic and hygienic measures to improve the general tone of the patient; Nature will gradually overcome the disease.

The treatment of tuberculosis in properly regulated institutions has been attended with success. We may hope for similar results in trachoma.

If the disease is far advanced on to the tarsus and the surgeon sees that entropion and trichiasis will probably result or, in earlier cases, providing the tarsus is affected and the patient cannot continue treatment for some time under suitable conditions, partial tarsectomy is indicated, part of the diseased tarsus is removed *en masse*, leaving only about two millimetres of its lower part. The conjunctiva of the fornix is then sutured to the upper edge of the remains of the tarsus. The presence of *pannus* does not contraindicate it, but rather the reverse. The majority of cases clear up very quickly; entropion and trichiasis are generally prevented.

By partial tarsectomy all the diseased conjunctival tissue is not removed, but only that part

which, when complicated and distorted, causes most serious sequelae and may predispose to most serious complications.

If there is much blepharospasm and narrowness of the interpalpebral aperture, a canthotomy is indicated first.

In further advanced cases with entropion and trichiasis canthotomy is generally indicated first. After that attention should be paid to the trichiasis. The operation the writer has found most useful in these cases is splitting the lid freely along the white line, carrying the incision obliquely up and in and up and out for about three millimetres on to the eye-lid at the inner and outer terminations of the eye-lashes. This allows the skin and eye-lashes to slide upwards. Then a strip of mucous membrane from the lip or skin from the upper lid is transplanted into the wound. After this has healed a partial tarsectomy may be done.

In very severe cases, where there is marked contraction of the conjunctival sac and posterior symblepharon, any or all of the above procedures may be indicated, but owing to the contracted state of the conjunctiva, it cannot be brought down to the cut edge of the tarsus after partial tarsectomy. In these cases mucous membrane from the lip may be transplanted with success.

NOTES OF CASES.**A case of Dysentery due to worms. *Ascarides Lumbricoides*.***(Communicated.)*

Patient, a girl aged about seven years, emaciated and thin, was complaining of pain near the navel for some time and was treated for acute amœbic dysentery. She exhibited the following signs and symptoms: Intense pain occurring at intervals, which made the child shriek out. There were vomiting and diarrhœa and later on mucus and blood were found in the stools. The evacuations were very frequent and scanty and numbered fifty to sixty times a day. The patient was restless and had a very dry and thickly coated tongue. The pulse was rapid and temperature rose slightly. One night the case proved bad, vomiting and purging became excessive, so much so there was no rest for the child. Two injections of Emetin were given morning and evening, which intensified the pain and the vomiting. The patient was also treated with castor oil emulsion and bismuth. There was absolutely no relief. Worms were then suspected and three grains of Santonin with Hyd. Cum Creta in divided doses were given on empty stomach thrice a day and the rest of the treatment was put a stop to. Before the third powder

could get in ten live worms were passed and the following day they numbered from 30 to 40.

This case is interesting because, in the midst of the serious symptoms of the disease, a preliminary precaution for treating worms is unfortunately set aside. It is common knowledge that such cases do arise in the midst of one's practice; but pointed attention should be drawn to the fact of administering first the remedy for worms before the actual treatment for other symptoms or finding out *entameba histolytica*.

MEDICAL ITEMS OF INTEREST.**Malaria**

Comessatti (*Il Morgagni*) in a lengthy article records his experiences with a large number of cases of malaria. He says the disease has been more serious of late years, not only amongst the soldiers, but in the civil population. In malarial enlargement of the spleen the movement due to respiration is often much limited by the presence of perisplenic adhesions. The absence of any enlargement of the spleen in malaria is uncommon, and some perisplenitis is usually present. Malarial perihepatitis is comparatively rare, although the large liver of malaria is not infrequent. There is no constant relation between the severity of the infection and the size of the spleen. Many varied diseases may be superimposed on the malarial state. The reciprocal effect of typhoid on malaria is of special interest: usually it renders the malaria latent, but neither disease gives immunity from the other. Lobar pneu-

monia did not appear to be modified by the presence of malaria. The statement that malaria tends to render tuberculosis milder must be accepted with much reserve. When hæmoptysis occurs in malaria, pulmonary disease (tuberculous or cardiac) should be excluded before the hæmorrhage is attributed to malaria. Malarial anæmia assumes peculiar gravity in pregnancy. The pigmentary changes in the skin and pathological findings show that the suprarenals are often affected. The author discusses malaria and pregnancy, congenital malaria, malaria and the nervous system (six severe cases with meningitis are reported in full), and the treatment by quinine, by diet, by arsenobenzolin, and by radiotherapy, and ends his paper by giving certain criteria to judge whether the malaria is cured or not.—*British Medical Journal*.

Treatment of Hiccup

WEGELE (*Deut. med. Woch.*) discusses the treatment of hiccup, and notes that in slight hiccup a teaspoonful of sodium bicarbonate on a full stomach may often give relief, its action probably being due to generation of carbonic acid. He also recommends a device described in 1921 by Fuld, who found that the introduction of a stomach tube quickly arrests hiccup. A more radical procedure is the injection of an anæsthetic into the phrenic nerves, as recommended by Kroh (*Deut. med. Woch.*, August 11th, 1921). A few days after reading Kroh's account Wegele was consulted by a patient who suffered from incessant hiccup, and had been able to eat little and not to sleep at all for eight days. A careful examination revealed nothing abnormal apart from the hiccup, and as it was unaffected by compression of the phrenic nerves and the patient was in

a critical condition, bilateral injections of novocain were given, an interval of a day being allowed between the injections on the two sides. Complete arrest of the hiccup was effected in a few hours, and when the patient reported himself eight days later there was no sign of a relapse. In one of the two cases recorded by Kroh, the patient had been driven so frantic by the hiccup that he attempted to commit suicide. The result in both these cases was dramatically successful. Kroh injects the local anæsthetic about two fingerbreadths above the clavicle, the needle being inserted at the outer border of the sternomastoid muscle and thrust to a depth of 2 to 4 cm. Pain in the shoulder and cardiac and abdominal regions betrays contact of the needle with the phrenic nerve.—*British Medical Journal*.

The Treatment of Tuberculous Adenitis: By Boggs, *American Journal of the Medical Sciences*, July, 1921.

1. Radium will cure more cases of tuberculous adenitis than any other method. Radiotherapy alone will cure over 90 per cent. of these cases.

2. Surgical treatment is always contradicted primarily in every case of tuberculous adenitis.

3. Those who still hold to radical operation will find the responsibility harder to shoulder with the ever-increasing recognition of the fact that tuberculous adenitis can be cured without it.

4. Hard, fibrous nodules following radiotherapy seldom contain any tuberculous foci, but it may be advisable to remove these nodules through a small incision the same as a foreign body.

5. It is to be remembered that large cervical glands may be due to sarcoma, Hodgkin's disease, leukemia,

etc., and that radiotherapy is still the best form of treatment for multiple glandular tumors, but the end results are not the same as when the enlargement is due to tuberculosis.

A Case of Juvenile Deforming Arthritis of the Hip (Sur un cas d'arthrite déformante juvénile de la hanche.) *Rev. d'orthop.* By YVERNAULT.

The case reported was that of a man of 21 years who, at the age of 7, injured his right knee in a fall. The knee was immobilized for two months and cured. There had never been any disturbance of hip function. During military service the knee again caused trouble. Examinations showed signs of right coxa vara with shortening of 2 cm., and an equal amount of upward displacement of the great trochanter, considerable limitation of abduction of the hip, and some laxity of the hip joint. There was no functional trouble in the knee joint. The X-ray showed considerable flattening of the head of the right femur, especially in the transverse diameter, and that it was much lower than the top of the great trochanter. The acetabulum was similarly deformed, being molded to the shape of the head of the femur. The neck was shortened to such an extent that the base of the femoral head was almost on a level with the inter-trochanteric line. The same condition, though much less marked, was found also in the left hip. The bilaterality of the lesions and the fact that they developed without causing any particular trouble suggest that they were of congenital origin.—*Surgery Gynecology and Obstetrics*.

Burns and Their Treatment: An Experimental, Anatomic-Pathologic, and Clinical Study (Les brûlures et leur traitement: travail expérimental,

anatomo-pathologique et clinique *Rev. de Chir.* By A. KOZARILL.

In order to test the theory that the fatalities in cases of burns are due to intoxication combined with nervous shock as suggested by Askaniazy of Geneva, the author carried out a series of animal experiments and a series of clinical trials of serum treatment of hospital patients. All the findings clearly demonstrate that the only sustainable theory is that a toxæmia is produced in burns.

A reaction of the blood or lymphohæmatopoietic system manifested by eosinophilia is not characteristic of burns alone, but is observed in every intoxication due to the destruction of tissues.

The experiments show also that a burn may be fatal even when the nerve reflex or nervous shock and the alteration of the blood are overcome. The nerve shock may be prevented by the induction of general or local anesthesia or by section of the nerves of the burned area. Alterations of the blood or the formation of thromboses may be prevented by ligation of the vessels of the burnt areas.

The toxins pass by the blood capillaries or lymphatics and are arrested in the lungs where a mass of eosinophiles is seen. It death occurs within twelve or twenty-four hours after the accident the blood drawn during the first twelve hours shows an increase of eosinophile polynuclears. After twenty-four hours the number decreases. The same thing is seen in lung sections of guinea pigs or men dying within twenty-four hours of the accident. The rapid intoxication does not give the organism time to react.

Passive immunization by vaccination or auto-immunization by the injection of blood or serum of an intoxicated animal increases the chances

of survival. The organism reacts as always by the production of antitoxins. If the quantity of toxins is greater than that of antitoxins the patient dies intoxicated, but if the opposite is true he survives. The life of an animal intoxicated to the degree of toxæmic shock may be saved if there is time to inject sufficient antitoxin to neutralize the toxins.

Serotherapy is therefore indicated in cases of burns if the injection of serum can be made very rapidly so as to prevent the action of the toxins. Repeated injections of the serum of a burned animal causes gradual disappearance of the symptoms of toxæmic shock.

Despite the injections of serum, the general treatment of burns by the subcutaneous injection of physiological serum or the withdrawal of small quantities of blood to diminish the toxæmia and the administration of heart stimulants is indicated. It must not be forgotten, moreover, that burns cause a disturbance in the equilibrium of the blood. This early disturbance, which is characteristic of toxæmic shock, favors the rapid development of infective complications. Therefore, as soon as the serum injection is made the possibility of rapid and early infection should be guarded against.—*Surgery, Gynecology and Obstetrics*.

Multiple Sclerosis and Facial Paralysis (*Deutsche Ztschr. f. Nervenhe.*) By M. NONNE.

Three cases in which after a period of observation the diagnosis of multiple sclerosis could be made, are here described. In all three there was unilateral transitory facial paralysis with normal electrical reaction. In two of the cases the facial palsy was recurrent. The author infers, therefore, that where facial paralysis of obscure origin makes its appearance or where

this disturbance is recurrent multiple sclerosis should be suspected. Further where in making a differential diagnosis a history of spinal disease suggests multiple sclerosis, if it is found that a transitory facial palsy, for example a disturbance of the eye muscles, had been observed, this circumstance should be considered as evidence of multiple sclerosis.—*The Journal of Mental and Nervous Disease*.

OUR GRIEVANCES.

IN ASSAM.

The following memorial has been submitted to the Hon'ble the Minister in charge of the Medical Department, Government of Assam, by the Sub-Assistant Surgeons:—

Your most humble memorialist is grateful to the Government for the recent increase in the pay of his class, but expresses his regret and disappointment at finding the scale far below its expectation and also he is disappointed at the calculation of his initial pay not in accordance with the length of service, as in the case of the Assistant Surgeons of Assam; and so the Sub-Assistant Surgeons of Assam except in senior grade are receiving much less pay than that of the Sub-Assistant Surgeons of Bengal of the same length of service. Your memorialist, therefore, is not a little disappointed to find that though his scale of pay has been

revised twice lately, the position of the service unfortunately still remains the same and the disabilities from which it has been suffering have not yet ceased to exist.

Since the first constitution in Assam the pay of the Sub-Assistant Surgeons was fixed at 25 per cent. higher than that of any other province in India except Burma. This higher scale of pay was introduced to attract candidates to a province where there was practically very little or no private practice. The cost of living was prohibitive and there was little prospect of advancement since no sub-divisional and head-quarters hospital has been left in charge of Sub-Assistant Surgeons, and at the same time they were required to serve in many unhealthy and inaccessible stations, specially while on Hill Service where the want of proper facilities for the education of their children were badly felt, inasmuch as many places in Assam are without schools and in most of the places they were unable to live with their families, necessitating two establishments. They had to smart under many other difficulties and disadvantages which from time to time were represented to the Government. Your memorialist, therefore, fails to understand why the Sub-Assistant Surgeons of Assam, have been put on the same foot-

ing as regards their pay with the Sub-Assistant Surgeons of Bengal, Punjab and Madras, where living is much cheaper than that of Assam. The condition of Assam approximates to that of Burma in every respect. It would have been more appropriate had the Burma scale of pay been sanctioned to the Sub-Assistant Surgeons of Assam.

The present pay is quite insufficient. The prices of necessities have during the last few years gone up so high that it is next to impossible, with the poor pay the Sub-Assistant Surgeons get, to make a decent living, not to speak of meeting the expenses on books, journals and appliances, etc., which are essential to keep pace with the growth of science.

In all other departments a certain percentage of superior posts are always thrown open to the subordinates. So far as the Sub-Assistant Surgeons are concerned, the Government of India has empowered the Local Government to promote specially meritorious Sub-Assistant Surgeons of 20 years' service. Unfortunately this has become a dead letter and promotion after 20 years' service does not help a Sub-Assistant Surgeon any way. At least 2 per cent. of such appointments should be reserved for the meritorious Sub-Assistant Surgeons with ten years' service. Formerly two

such appointments were given, but unfortunately there is only one at present. It is obviously impossible to keep any service contented and efficient if all outlets of promotion to superior service to its distinguished members are to be shut against them. In Punjab six places in the cadre of Civil Assistant Surgeons have been reserved for the Sub-Assistant Surgeons *vide* No. 30216, Medical, dated the 3rd December 1921 from the Secretary to Punjab Government.

Your humble memorialist begs to point out that the temporary staff of the Sub-Assistant Surgeons who are drawing the pay of the lowest permanent grade at present are not allowed the lowest grade of permanent pay in the new revised scale. It is very unjust if the previous services of these temporary Sub-Assistant Surgeons are considered as probationary. They should be given at least the lowest grade pay of the permanent scale without any reduction. Your memorialist also requests for the abolition of the present bond system altogether, as in no other service is there an indemnity bond.

The allowances allotted to the various posts should be thoroughly enquired into and revised. The allowances should be brought in conformity with

those sanctioned in Madras which are as follows:—

Teaching	30--50
Laboratory	30
Lunatic Asylum	50
Jails	30
Itinerating duty	50
Cholera duty	50

The dispensary allowance should be enhanced to Rs. 20. The allowance for the additional charge of Police Hospital should be Rs. 15.

The Sub-Assistant Surgeons in the Jails are suffering greatly on account of there being no compounder to help them. Your humble memorialist begs to request that a Compounder be kindly given to every Jail Hospital.

Travelling Allowances are reckoned according to the pay of an officer for journeys either on duty or on transfer. As the pay of Sub-Assistant Surgeons is very low, travelling allowance does not cover even the actual expenses. Your memorialist, therefore, prays that a daily allowance of Rs. 3 be given to all the Sub-Assistant Surgeons as in the case of Veterinary Assistants and other officers and be considered second class officers.

Your humble memorialist requests that provision be made for students with brilliant careers in schools and deserving members of the service for admission to

Medical Colleges with suitable concession with a view to afford them scope for professional development and for bettering their prospects both material as well as professional. The recent proposal of the Government for substituting a post-graduate course in place of the present grade examination should be brought into force immediately. This post-graduate course should be given in a Medical College and not in a Medical School.

The Sub-Assistant Surgeons should be given privilege of attending the Provincial Durbars—as has been granted in case of the Inspectors of Police and clerks above a certain pay.

Your humble memorialist, therefore, most earnestly prays that you will be pleased to reconsider their grievances, for which act of kindness your memorialist shall, as in duty bound, ever pray.

Your humble memorialist is confident that you will do your best to improve the status and prospects of the Sub-Assistant Surgeons of Assam.

IN THE PUNJAB.

Copy of a letter, from the Secretary to Government, Punjab. (Transferred Departments), Lahore, to the Inspector-General, Civil Hospitals, Punjab:—

With reference to your letter No. 1035E, dated the 25th January, 1922, I am directed to convey the following orders of the Punjab Government (Ministry of Education) regarding the promotion of Civil Sub-Assistant Surgeons to the rank of Assistant Surgeons in supersession of previous orders on the subject.

2. In future, Government is prepared to promote to the rank of Assistant Surgeon, on suitable vacancies occurring, a strictly limited number of Sub-Assistant Surgeons with not less than 15 years' service who have, in the exercise of their profession, shown themselves to be possessed of very exceptional attainments, and for this purpose will reserve not more than six places in the Assistant Surgeons' grade.

3. The Sub-Assistant Surgeons will be nominated by the Inspector-General of Civil Hospitals, for promotion and must be approved by Government. They will be required, if they have not already done so, to take the Membership of the Punjab State Medical Faculty, before they can be appointed to the rank of Assistant Surgeon, and can under no circumstances be appointed unless they have fulfilled this condition. But it should be clearly understood that possession of the Membership of the Faculty by a Sub-Assistant Surgeon is not

1922.]

CORRESPONDENCE.

in itself a qualification for advancement, and will not entitle him to promotion.

4. Final orders are under consideration, but for the present, selected candidates, who have not yet taken the Membership of the Faculty, will be treated on duty under Fundamental Rules 9 (6) (B), while undergoing the period of study from October to November in the following year which they will be required to undergo before they are permitted to appear for the Membership Examination. During this period, they will draw pay under the ordinary time scale without allowances, plus a lodging allowance while in Lahore, not exceeding Rs. 25 per mensem to be fixed by the Inspector-General of Civil Hospitals, Punjab. The maximum number of selected candidates that the Inspector-General, Civil Hospitals, Punjab, is authorised to depute at one time for this course of study is one more than the number of vacancies existing at the time in the places reserved under paragraph 2 above.

Endorsement No. 25115E, dated 16th November 1922, by the Under Secretary, Finance Department:—

Copy forwarded to the Accountant-General, Punjab, for information. The extra cost this year will be met from anticipated

savings under Head 32. Medical—District Medical Officers, Uncovenanted Medical Officers.

No. 7278E, dated 26th November 1922.

Copy forwarded to all Civil Surgeons and Medical Officers, for information and favour of communication to all Sub-Assistant Surgeons serving under their orders who may at the same time be informed that promotion will be strictly according to merit and by selection and not by application from Sub-Assistant Surgeons which might be rigidly discouraged.

2. The Inspector-General, Civil Hospitals, Punjab, will always be glad to have reports sent in confidentially in respect of the Sub-Assistant Surgeons whom the Civil Surgeons and Medical Officers consider to be deserving of the concession and which shall always receive due consideration.

Sd. D. M. DAVIDSON, M.D.,
Lieut-Col., I.M.S.,
Officiating Inspector-General,
Civil Hospitals,
Punjab.

CORRESPONDENCE

Right Living

SIR.—It has always struck me that physicians, while working in the field of preventing and curing diseases, can give the laity sound advice on matters pertaining to right living. I have been

particularly gratified, therefore, to read a contribution on this subject in a magazine, wherein the writer points out that physicians should lead patients to right living and to children well-born. No one can disagree with the author's dictum that to have babes born well we must have parents living well. "We cannot", continues the writer, "control the third or fourth past generations, but we can bring to the present the accumulated knowledge and wisdom of all the ages; and we of the medical profession have the knowledge and authority. We should not be content to condone wrong acts because 'everybody does it'. 'Advice to stop and think may be worth more than any drug prescribed. Give more time to impressing on patients the necessity for right living, and less to removing the effects of wrong living. We may not thus become wealthy, but we will have a following of those who are truly seeking the welfare of mankind, and what greater honour can there be than that of improving our race?' This is indeed sound advice which deserves to be read, marked and inwardly digested by all physicians.

P. V.

OUR ACTIVITIES.

Baroda.—I. Meeting held in the State General Hospital at

5-30 P.M., on the 19th November, 1922. Nine members were present.

A paper on "Potassium Iodide: its importance among Pharmacopeal drugs" was read by Mr. D. F. Shah.

Mr. D. F. Shah was elected to represent the Baroda Branch at the Annual Conference of the Association to be held at Indore in December 1922.

Resolved that Mr. A. H. Joshi should wait upon the Chief Medical Officer, Baroda, to personally discuss with him the question of revision of scale of pay of the Sub-Assistant Surgeons in the Baroda State Service.

II. Meeting held at the State General Hospital, at 5-30 P.M., on the 12th November, 1922. Eight members were present.

Notes on a case of "Aneurism of the Ascending Aorta with Aortic Regurgitation" were read by Mr. T. K. Jejuriker.

Gujarat.—I. Meeting held on the 29th October, 1922. Four members were present.

Resolved that the draft letter addressed to the Surgeon-General about the designation of the service of Sub-Assistant Surgeons be adopted.

II. Meeting held at Dr. Joseph Benjamin's Dispensary, Agiary Road, at 5 P.M.,

1922.]

on Sunday, 12th November, 1922. Eight members were present.

Resolved that Dr. Shambhu Prasad D. Mehta, M.C.P.S., Tutor, B. J. Medical School, Ahmedabad, be elected as a representative to the Indore Conference to be held next month, from this Branch.

(2) Resolved that the proposals read out, together with the two others suggested by Dr. Shambhu Prasad be adopted and submitted to the Indore Conference for consideration.

(3) Resolved that a letter be sent to the Secretary to the Government of Bombay, General Department, under the signatures of the Vice-President and the Secretary, as regards Notification No. S. 20 (21) of 1922, dated 18th September, 1922, in the General Department, wherein the word "Mr." is not prefixed to the names of the two members elected to the Bombay Medical Council, under section 2 (2) (d) of the Bombay Medical Act. Mr. Joseph Benjamin refrained from voting in the matter.

Gwalior.—Meeting held on 19th November 1922 at the Jaya Arogya Hospital, Lashkar. Major V. M. Phatak presided and all the Assistant Surgeons and Sub-Assistant Surgeons at the head-quarters attended.

A paper on "Administration of Quinine" was read by Mr. J. V. Gadre, Civil Dispensary, Morar, and discussed at the meeting.

"Resolved that Mr. K. D. Kulkarni should represent the Gwalior Branch at the 17th Annual Conference of the All-India Sub-Assistant Surgeons' Association to be held at Indore on 18th, 19th and 20th December 1922, and that in case he is unable to do so, Mr. M. D. Pustake should represent the Branch.

Jubbulpore.—Meeting held on the 26th November 1922. Seven members were present.

The following resolutions were passed:—

I. Doctors Sheorey and Dilbag Rai are selected as delegates to the Annual Conference to be held at Indore during December. In case any other member be able to proceed to Indore, then Doctor Dilbag Rai will proceed as a member of the Standing Committee.

II. With reference to A.I.I. No. 536 of 1922 sanctioning new rates of pay to Military Sub-Assistant Surgeons, the Government of India be requested to kindly delete the concluding clause to para. 1 of the A.I.I. in question, as out of over 1,000 S.A.S. more than one-third S.A.S. (Jemadars) have not got any increment at all. The clause reads as follows:—

"S.A.S. who now rank as Jemadars or Subedars will be brought on to the new rates of pay in the manner applicable to incremental salaries under article 156-A of the Civil Service Regulations".

III. With reference to the Indianisation of the Army in India, the Government of India be requested to kindly delete the following words in the 5th line of appendix II (I.M.D.) of Army Regulations India Vol. VI. (Medical), so that candidates of Indian parentage may be able to join the Assistant Surgeon Branch of the I.M.D.

The words are, candidates for Assistant Surgeon Branch "Must be of European or Eurasian parentage".

IV. The Association notes with regret the very disappointing reply of the Hon'ble the Education Minister, C.P., to the Deputation of the Provincial Conference (1921) regarding the proposal of promoting S.A.S. to Assistant Surgeonships, and that the C.P. Government be requested to fix up certain percentage as has been done by the Madras Government.

Surat.—Extract from the resolution passed at the meeting of the Surat Branch of the All-India Sub-Assistant Surgeons' Association, on 24th September 1922:

(2) This branch takes the opportunity of congratulating Rai Bahadur Dr. Sarjuprasad on his being appointed Chief Medical Officer, Indore-State, and Personal Physician to His Highness the Maharaja of Indore, and pray to God Almighty to give him long life, and energy to rise equal to the occasion.

NOTES AND COMMENTS.

Elsewhere in this issue we publish the Orders of the Punjab Government regarding the promotion of a limited number of Sub-Assistant Surgeons to the rank of Assistant Surgeons. While we are glad that the principle underlying the claim of the former to be promoted to the grade of Assistant Surgeons is recognised by the Government, we cannot but characterise the conditions imposed as very hard and stiff. The long-deferred act of justice would have come with greater grace if it had not been hedged round with unwarranted conditions.

We find from the *Glasgow Medical Journal* that the Home Secretary has given notice of certain new regulations under the Dangerous Drugs Act of 1920, amending those at present in force. The object of these amending regulations is to correct certain defects which have been

recognised in the original regulations of 20th May, 1921. The following are the salient features of the amending regulations:—
(1) Persons authorised to give prescriptions for dangerous drugs may no longer prescribe them for their use. This has been rendered necessary by several cases where medical men, who were victims of the drug habit, obtained considerable quantities of morphia and cocaine on their own prescription made out to themselves. The drugs will, of course, be procurable by the doctor for use in practice as before. (2) It is now an offence for persons even to attempt to obtain drugs from a chemist by misrepresentation although the fraud is discovered before the

drugs are handed over by the chemist. (3) All persons dealing in the drugs to which the Act refers are now required to preserve for two years all prescriptions, records, etc., which the Act and Regulations direct them to keep.

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A qualified and experienced Female Sub-Assistant Surgeon for the Hewson Hospital, Jodhpur, for charge of Female Ward and out-door maternity duty.

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ANNOUNCEMENT.

We regret that, owing to some unavoidable circumstances referred to already in a previous issue, there has been some delay in the publication of the last few issues of **The Indian Medical Journal**. With a view to make the publication current as early as possible, we are now constrained to publish some issues with reduced number of pages, for which we crave the indulgence of our readers; and we beg to announce that, after the publication is made current, due amends would be made for this reduction.

D. V. YENKAPPA,
Editor.