

removal from the service or dismissal for inefficiency, misconduct, or other valid cause, will be vested absolutely in the Central Committee. Any member of the service who has been recruited in England, in the event of non-confirmation at the end of the period of probation or on removal or dismissal, will receive a sum sufficient to cover her return journey to England. Every hospital will be in charge of a local committee, and the medical woman in independent charge of such hospital will be entitled to attend all meetings of the local committee. She will have full professional control of her hospital, and such powers of administrative control as may be determined by the authorities financially concerned. She will not be under the civil surgeon in any way, but should she wish to do so, she can always call him in for professional assistance or consultation.

As regards the inspection of women's hospitals, it is proposed to associate with the Inspector-General of Civil Hospitals one of the senior medical women in each province, who will receive extra pay and travelling allowance for this purpose, but she will not be a full-time officer. She will make her visits of inspection in addition to any which the Inspector-General of Civil Hospitals may think fit to make himself, due regard being paid to *pardah*. She will also be expected to give sympathetic judgment, opinion, and advice to the younger women in charge of hospitals. It is proposed also that the inspection of the minor female branch dispensaries shall be entrusted to the medical woman in charge of the large hospital at the headquarters of the district concerned.

Lastly, the Central Committee, who will now be mainly responsible for the salaries of the medical women of this service, hope that the provincial committees will devote the funds they will thus save to increase their staff of female assistant surgeons, who will work as assistants to the medical women in charge of the larger hospitals.

REMARKS ON THE SCHEME.

This, ladies, is the scheme, which I think you will agree redresses all legitimate grievances and gives the medical woman in India an assured and definite position. It requires no further explanation on my part, but I should like, with your permission, to reply to one criticism that has been made on it, and also to offer a word of advice to any candidate who may think of entering the new service. The criticism to which I refer is to the effect that the rate of pay on first joining is inadequate, and that it will not attract the right type of woman. In reply to that I would point out that when you take into consideration the free house, the terms are better than those offered to young officers of the Indian Medical Service. Moreover, from the very beginning the medical woman has the opportunity of private practice, whereas the young officer of the Indian Medical Service spends his first five or six years in military employ, where he can have little or no private practice, whilst he has in addition all the expenses incidental to regimental life.

We need only add that the Indian Medical Service as a whole will extend a hearty welcome to the new service.

Current Topics.

FIELD HOSPITAL EQUIPMENT.

In April 1912, a Committee was appointed to revise the present system of field medical organisation in India and at the same time to bring the field equipment more in accordance with present surgical practice and military experience.

The Committee consisted of the following officers:—

Surgeon-General A. T. Sloggett, K.H.S., C.B., President.

Col. J. C. Robinson, A.H.S., P.M.O., 1st Division.

Col. A. J. Cobbe, V.C., D.S.O., General Staff Branch.

Major Jay Gould, D.A.S., M.S. (Mobilisation).

Major J. W. Muscroft, Quartermaster-General's Branch.

Major F. E. Gunter, R.A.M.C., with Col. B. G. Seton, as Secretary.

The proceedings of this Committee have now been approved by the Government of India, and the changes in equipment will be carried out gradually.

The Committee were of opinion that the existing organisation is based on Frontier experience alone, that insufficient arrangements were made for lines of communication, that much unnecessary material was carried and that there was a great lack of dressings and chloroform.

Instead of having only—

(a) Field ambulances.

(b) General hospitals.

There will in future be four units in the field, viz.:—

(a) Field ambulances working with troops at the front.

(b) Clearing hospitals (200 beds capable of expansion.)

(c) Stationary hospitals on lines of communication.

(d) General hospitals.

The equipment of these units will be modified to meet the special requirements of each class.

Important modifications have been made in the equipment. An Indian field ambulance has hitherto carried 75 different drugs, and a general hospital 178—the corresponding numbers in the British service at home being 42 and 42 only. There has, on the other hand, been a very short supply of dressings of many different kinds. The new arrangement abolishes boric lint and surgeons too, and for 35 yards of cyanide gauze substitutes 340 of cyanide and 149 of plain gauze. Bandages too have been increased in a field ambulance, from 174 to 295. Iodine, metallic, has been adopted as a new disinfectant, and linen thread takes the place of some of the expensive and perishable ligatures now in use.

A most valuable innovation is the substitution of a "Dressing box" for the old Box 1. Light. Medical—Box 2. Light becomes a Field Surgical Pan-nier; and the old Box 3 Light, the packing of whose complicated assortment of fancy splints has always been a matter of great difficulty, is replaced by a fracture box somewhat on Home service lines, in which perforated sheets of metal, Gooch splinting, and tools are carried.

Chloroform has been increased from 13 lbs. to 22½ lbs.

The supply and transport equipment has been simplified, and new "Medical comfort" and Reserve boxes take the place of the old ones.

An important change is the adoption in the Indian units, other than field ambulances, of clothing for patients; and in clearing and general hospitals mosquito nets are added.

As regards personnel a field ambulance in future will have 5 medical officers instead of 4, and the senior will draw a command staff allowance of Rs. 400 as C.O. The same will apply to a clearing hospital.

THE GRAVES OF I. M. S. OFFICERS IN THE MILITARY CEMETERY, CALCUTTA.

WE direct the attention of our readers to the following letter from the assistant Commanding Royal Engineer, Calcutta, on the neglected state of the graves of nine I. M. S. officers who have been buried in the Military Cemetery, Bhowanipur, Calcutta. The small sum of 30 rupees each is only needed to keep them in permanent repair, and we are sure that many of our readers will be glad to help.

No. 5533.

OFFICE OF A. C. R. E. PRESIDENCY.

Fort William, 1st September 1913.

From

The Asst. C. R. E., Presidency District,

To

The Director-General,
Indian Medical Service,
Civil Secretariat Buildings, Simla.

Dear Sir,

I wish to bring to your notice that monuments described as under exist in the Military Cemetery, Bhowanipore, Calcutta, but as they are not endowed no funds are available for their upkeep.

The cost of endowments would be Rs. 30 (£2) each, and it has occurred to me that your service may be disposed to raise this sum in order that the monuments may be kept in repair for the future at the expense of the State.

Yours faithfully,

(Sd). W. P. WALSH,

CAPTAIN, R.C.

For Asstt. C. R. E. Presidency.

1. 5 Wm. Keates, Deputy Inspector-General of Hospitals, Dacca Circle, died 19th April 1869.

2. 32 Robert Bancraft Kinsey, F.R.C.S., Deputy Inspector-General of Hospitals, died 1st April 1865.

3. 34 Wm. Montgomerie, died 18th September 1855, Superintending Surgeon, Bengal Presidency. (This is the monument which will cost Rs. 70 to put in order).

4. 69 Wm. Peskett, M.D., Surgeon-Major, Bengal Medical Establt., died November 1870.

5. 79 Surgeon-Major John Elliot, M.D., F.C.U. Surgeon Supdt., Presidency General Hospital.

6. 80 Surgeon-Major E. J. Gayer, I.M.D., died 23rd August 1878.

7. 82 Surgeon-Major Gopal Chandra Roy, M.D. F.R.C.S., I.M.S., died 14th February 1887.

8. 83 Surgeon-Major C. Prentice, Bengal Medical Service,

9. 126 George Green Shilbury, Physician General, H.E. I.C.S., died 5th July 1857.

INDIAN LUNACY MANUAL.*

WE gave a very favourable opinion of the earlier editions of this useful manual, the new (3rd) edition has been revised in accordance with Act IV of 1912, which received the assent of the Governor-General in Council in March 1912.

Major R. Bryson's Manual is an able summary of the Lunacy Acts and Rules regulating the admission into, detention in, and discharge from Government Lunatic Asylums in India of public and private patients. It has been revised by Capt. P. Heffernan, I.M.S., the Superintendent of the Madras Lunatic Asylum.

It is a very practical and useful book and no Civil Surgeon's office should be without it. A valuable addition has been made in the last two editions, and that is the rules and regulations regarding insane soldiers of the British and Indian Armies. We have found the earlier editions very useful and this new edition will be more so. We strongly recommend it to our readers, its possession will save much trouble in dealing with these cases, and we hope that every hospital and office in India will possess themselves of a copy.

SIR JOHN P. HEWITT ON THE MEDICAL PROFESSION IN INDIA.

SIR JOHN P. HEWITT, G.C.S.I., the late Lieutenant-Governor of the United Provinces, gave very interesting address on medical matters in India at the opening for the session of St. Mary's Hospital School on 1st October. We must select a few of Sir John's remarks:—

After remarking on the enormous reductions in the death-rates of the army in India and among the prisoners in Indian jails, facts too well known to need repetition here he went on to remark on the great benefits derived from experiments on animals and on the great reduction

* 3rd Edition, 1913, Messrs. Thacker, Spink & Co., Calcutta.

in mortality from small-pox, due to the steady spread of vaccination.

We may quote his remarks on plague and anti-typhoid inoculation, etc. :—

I have already referred to the terrible mortality from plague in the last 15 years. It has long since been recognised that, except in extraordinary circumstances, compulsion is impossible, and the great obstacle with which the Government has been confronted is the difficulty of convincing the people of the utility of particular methods of prevention or cure. It is not easy to appreciate the mental attitude of people who, without having made a serious study of the facts and figures pertinent to the question, have increased the difficulties of those doing their best to contend with this terrible scourge by asserting that the vaccine discovered by M. Haffkine has encouraged the spread of the plague in India. There have, of course been instances in which evil results have been caused by particular doses having been unfit for use, or by the carelessness of individuals injecting the vaccine, but such cases have been rare, and the use of the vaccine has been, speaking generally, of enormous benefit. The conclusion at which we members of the Plague Commission unanimously arrived in 1899 was that "inoculation with Haffkine's prophylactic vaccine sensibly diminishes the incidence of plague attacks on the inoculated population, though the protection which it affords is not absolute; that it also diminishes the fatality of attacks; that its protective effect does not appear within the first few days after the inoculation, and that the protection lasts certainly for some weeks, possibly for some months."

Since this conclusion was formulated I have had, as the head of the Government of two provinces in succession, one with a population of 47,000,000 and one with a population of 14,000,000, to deal continuously with outbreaks of plague. The whole of my experience gained in this interval has confirmed the conclusion of the Plague Commission, and the statistics of the many epidemics in which inoculation has been practised under my own eyes go to prove that the use of Haffkine's vaccine has been of the greatest service in protecting people from plague. I could quote many cases, but I will content myself with one which has always impressed itself very much on my mind. A Parsi friend of mine, Sir Bezonjee Dadabhoy, the manager of the Empress Mills at Nagpur, in which city some years ago a serious epidemic resulting in the death of over 7,000 people occurred, endeavoured to induce the whole of the operatives of the mills to be inoculated. The total number on the muster rolls was between 6,000 and 7,000, and the daily attendance between 4,500 and 5,500. The number of mill hands inoculated was 5,046. Among the comparatively small number of uninoculated there were 118 deaths, while among the inoculated there were only 9 fatal cases, 6 of which were the result of an attack within 10 days of inoculation.

This is a report from one whose only interest was to benefit the operatives in his employ and the facts narrated in it prove conclusively that by inducing them to be inoculated he secured protection for them during the epidemic.

ANTITYPHOID VACCINATION.

Turning to enteric fever, the first thing that claims attention is that it is much more prevalent among Europeans than among Indians. For many years it was chief among the fatal diseases prevalent in the British army in India. In the last five years of the last century 43 out of every 100 deaths among British soldiers were due to enteric fever. The greatest liability to suffer was between the ages of 20 and 25 and during the first year of service in India, the liability of men to contract it in the first year of service being at least twice as great as in any other period. At the end of last century possibility of life would have been as good for the European troops in India as for males of the same age in

England had it not been for the prevalence of enteric fever.

The chief task then before the medical officers employed with British troops was the reduction of the liability of the British soldier to enteric fever. In 1898, only 15 years ago, the mortality from this cause was over 10 per 1,000; among the native troops it was the same time something between 0.01 and 0.02 per 1,000. The use of Sir Almroth Wright's antityphoid vaccine was attempted about this time in a spasmodic way, but it was not till 1903 that this plan of fighting enteric fever became general. In that year 295 deaths were caused by enteric fever, and the mortality caused by it was over 4 per 1,000. Since then the death-rate declined, till in 1910 it was 0.63, and in 1911, the number of deaths being 24, only 0.33. In the latter year there were 61,822 men protected by vaccination and 9,552 not protected. Among every 1,000 of the non-protected men there were 6.7 cases and 1.15 deaths, while among every 1,000 of the protected there were 1.7 cases and 0.17 death. We must not, indeed, forget that a great deal has been done in the direction of isolating convalescents and bacilli-carriers, but these figures like those regarding men in the army in France and America, conclusively prove the beneficial results of antityphoid inoculation.

CLOSING REMARKS.

What I have attempted to tell you to-day will, I am sure, satisfy you that experience in India, as elsewhere, proves conclusively that operations on animals have afforded untold benefits to the human race. Performed with the utmost care by skilled surgeons, they are rendered almost painless through the use of anæsthetics, and are followed by a drug-softened death. As instances of cruelty to our dumb friends, how can they possibly be compared to the limitless sufferings imposed on beasts of burden and other animals, on whose aid mankind depends, in India and many foreign countries? One experiences every day in an Indian city horrors in the treatment of animals, inconceivable to the stay-at-home inhabitant of these isles accustomed only to the pampered pets and well-fed cattle of himself and his neighbours. What a field for the tactful energy of animal lovers there is in that vast country where pity rarely impels the passer-by to put a wounded and stricken animal out of pain instead of leaving it to die a lingering death; where beasts of burden of all kinds are systematically overloaded and regularly worked when they ought to be in the care of the veterinary surgeon, and where even the sacred cow, the animal of the Hindus, is confined in evil-smelling and ill-ventilated hovels and often milked by the horrible *phunka* system which causes it terrible suffering. At present only one institution, enfeebled through lack of funds, makes spasmodic efforts to instil into the starved brains of owners and drivers of beasts some dim recognition of the fact that consideration shown to their cattle is likely to reflect substantial gain on themselves. For lovers of animal life, for those whose earnest wish it is to save the beasts of the field from unnecessary cruelty, and to ensure for them the minimum of harshness and pain involved in their use in the service of man, there is in India a splendid field for benevolent work which will, like mercy, be twice blessed in bringing relief to the animals which now suffer and honour to those who undertake it. Such cases, too, as that of the creature Baker—he doesn't deserve to be called a man—who was recently convicted of sending on a long railway journey a poor little Aberdeen terrier which had been mercilessly pushed into a box utterly inadequate for its size, and with ventilation insufficient for a canary, show that there is still much nearer home to occupy the Royal Society for the Prevention of Cruelty to Animals, whose vigilance we all admire. But the last people in the world who deserve to be attacked, on the ground that they are cruel or even unsympathetic towards animals, are those devoted seekers after benefit to the human race, who are in this country, in pursuance of the objects of the Research Defence Society, conducting experiments on animals

subject to strict rules and regulations and imbued with the righteous desire to cause them the least possible misery and pain.

DIGITALIS IN INDIA.

By the kindness of Mr. D. Hooper, Economic Botanist, Calcutta, we are able to give our readers the following account by Mr. Gordon Sharp, on the value of digitalis leaves collected in the Nilgiris, and it is very satisfactory to learn that the results of these experiments prove that the leaves grown in India are quite as effective as those grown elsewhere and for years past the Madras Medical Store Depot has used these leaves:—

REPORT ON DIGITALIS LEAVES.

General description.—The leaves are those of *Digitalis purpurea*, Linn., and arrived in sound condition. On casual examination they look in every way like ordinary wild or partially cultivated British or German leaves and they taste equally bitter when chewed. On closer examination they have coarser leaf stalks and the venation is somewhat coarser. The leaves themselves are somewhat darker and tougher than we are accustomed to see in Europe as a rule, but I don't think they are much different from wholly cultivated leaves grown in the south of England.

Examination of a Tincture prepared in my own laboratory.—To save time I had a small quantity of a 1 in 8 tincture (British Pharmacopœia) prepared in my own laboratory. This appeared to be darker in colour and to contain more resinous matters than a tincture prepared from ordinary British or German leaves. In taste it was as bitter as a specimen of the best tinctures.

Pharmacological Examination Action on Frog's Heart (Rana temporana).—Made July 16th, 1913. Temp. of Laboratory 60° F. (15.5° C.) Frogs pithed 24 hours previous to injection, all male frogs employed.

1. Frog 32.5 grams (620 grains) injected 4 fl. mins. (0.236 diluted to 8 fl. mins. with saline. into dosal m.l. lymphæ. In 3 hours the reflexes are in abeyance, the circulation in the web is feeble and the heart is almost stopped—the right auricle is still and there is only a faint flickering movement in the left auricle and in part of the ventricle.

2. Frog of 21 grams (324 grains) injected 2.5 fl. mins. (0.145 m.l.) dilute to 5 with saline as before. In 3 hours the reflexes are gone, the circulation in the web is stopped and all three heart chambers are still.

3. Control frog weighs 16.5 grams, reflex action normal, circulation in web active and the heart beating regularly—at the end of three hours when Nos. 1 and 2 examined.

Therapeutic Action on Human Heart Auricular Febrillation.—A woman of 78 who has had rheumatic fever suffers now and then from a breakdown in compensation. At the time the

tincture was given her she had a markedly irregular pulse with missed beats at the wrist rate 112 to 120 a minute. Swelling of feet and legs up to knee, fluid in abdomen and right breast and pain at the waist. Breathlessness and scanty urine, she had been in bed for some days. She was prescribed 15 fl. mins. (0.888 m.l.) of the tincture every 2 hours.

Condition in 24 hours.—Has taken 75 mins. (4.439 m.l.). The pulse is 76 a minute. Passing more urine. Swelling of feet less and feels more comfortable. Can sit up without having pain at waist.

Condition in 72 hours.—Has now taken 105 mins. (6.215 m.l.) Pulse 74 a minute and almost regular in time and rhythm. Swelling in feet, legs, breast and abdomen gone. Breathes comfortably. Passing large quantities of urine. Complains of slight nausea so evidently under influence of digitalis which has now been stopped.

Experiments with Second Tincture.—Pharmacological Examination—Frog 1 weight 21 grams (324 grains). Injected 2½ mins. (0.145 m.l.) diluted to 5 at the end of 4 hours reflexes gone, circulation in web very feeble, heart still—auricles in medium diastole, ventricle in full diastole. In 6 hours beat still—all chambers now in systole. In 16 hours no recovery.

2. Frog 16.5 grams (254 grains). Injected 2 fl. mins. (0.118 m.l.) In 4 hours reflexes in abeyance, circulation in web still, heart still in all chambers in moderate diastole, but on watching for one minute a flickering movement is seen to start in certain areas of the auricles and to pass over to a narrow strip of the ventricle. These continue at intervals of one minute for one hour. At the end of 6 hours after injection all is still in systole. In 16 hours after injection no sign of recovery.

3. Control frog (17 grains)—reflexes, circulation in web and heart all in order at end of 16 hours when experiment stopped.

Therapeutic Action—On Human Heart.—Man of 57 with a presystolic mitral murmur, swollen feet, legs, breathlessness, passage of less than 20 fl. oz. of urine (568.245 m.l.) Prescribed 15 fl. mins. of tincture (2.663 m.l.) every 24 hours. Pulse 100.

ACTION.

First ...	24 hours—urine 30 fl. oz. (85.2 m.l.)	pulse 95
Second " same " 90
Third...	.. " same " 95
Fourth " 40 .. (1136 m. l.)	.. " 90 swelling going.
Fifth " 50 .. (1410 ..)	.. " 89
Sixth " 100 .. (2841 ..)	.. " 84 swelling gone.

Result of Examination.—A tincture prepared from Indian grown leaves of *Digitalis purpurea*, Linn., is at least equal in action to a tincture prepared from British grown or German grown leaves.

THE SANITARY CONFERENCE OF BEHAR AND
ORISSA.

We quote the following extracts from the report of this Conference held at Ranchi in August last :—

Plague.—The present policy of Government in dealing with plague was considered and approved, the only suggestion made being that greater efforts should be made to popularize inoculation and that the number of inoculators should be largely increased. One member suggested that private practitioners should be encouraged to undertake inoculations.

Cholera.—It was recognized that we must look mainly to general sanitation, and in particular to the protection of the water-supply as a safeguard against cholera epidemics. The system recently adopted experimentally by the District Board in parts of the Muzaffarpur district of selling to the public packets of permanganate of potash, each containing a sufficient quantity to disinfect a well, was recommended for general adoption. The procedure to be followed in selling these packets should be similar to that already mentioned in connection with the sale of quinine.

Medical Relief.—(1) *Pay of medical officers.*—It was agreed that District Boards ought to give the medical officers in charge of their dispensaries at least the same pay as that given to Sub-Assistant Surgeons under Government.

(2) *Number of dispensaries.*—It was agreed that the number of dispensaries should be largely increased, but that it was impossible, in view of varying local conditions, to lay down any general principle. The Conference were much interested in the programmes prepared by the Tirhut District Boards.

(3) *Conditions on which dispensaries should be established.*—With reference to Bengal Government Circular No. 26L-S-G., dated the 3rd April 1905, it was decided that while, *ceteris paribus* preference should be given to places where local assistance is forthcoming, such assistance should not by any means be regarded as an essential condition for the opening of a new dispensary.

(4) *Character of dispensaries.*—The standard plan of dispensary and scale of equipment was considered suitable for places where the number of patients is fairly large. It was agreed, however, that a less pretentious style of building and less elaborate equipment would suffice for the smaller dispensaries and for those established experimentally in new places.

At the same time the Conference recognized that many of the existing dispensary buildings are unsuitable and their equipment deficient. The improvement of such dispensaries in important places was held to be quite as essential as the construction of new dispensaries.

Inspections.—The Conference were of opinion that the inspections at present made by many Civil Surgeons are too cursory and infrequent. This is due largely to the difficulty which the Civil Surgeon experiences in absenting himself for any length of time from his headquarters. As the number of dispensaries increases it will become increasingly difficult for the Civil Surgeon to supervise them efficiently. It was agreed therefore that Government should be asked to appoint an Assistant Surgeon to each district where the number of dispensaries justifies it for the purpose of these inspections.

Travelling dispensaries.—It was decided that a report on the working of the six experimental travelling dispensaries recently established should be awaited before the system is extended. It was thought, however, that District Boards should invariably have a Sub-Assistant Surgeon in reserve for deputation with medicines to places where cholera or plague breaks out in epidemic form.

Assistant Surgeons at Sub-divisional headquarters.—The Conference recommended that an Assistant Surgeon should be placed in charge of the Government dispensaries at all Sub-divisional headquarters stations.

CYANIDE OF MERCURY INJECTIONS IN EYE
DISEASES.

OUR readers are aware that at the Amritsar Eye Clinic, Lt.-Col. Henry Smith, I.M.S., uses largely subconjunctival injections of cyanide of mercury for the cure of many chronic inflammatory conditions of the eyelids.

In *Ophthalmology* (July 1913) Dr. C. B. Meding, of New York, has a useful article giving his experiences at the Amritsar Clinic.

We quote herewith some of his remarks :—

	Infected.	Good results.	No result.
Opacities of vitreous ..	1	1	...
Trachomatous keratitis (pannus) ...	100	75	3
Ulcers ...	40	25	5
Ulcer hypopyon ...	3	2	...
Keratitis ulcerus suppurativa ...	2	1	...
Corneal opacities (recent) ...	28	10	...
Keratitis parenchymatous ...	3	1	...
Sympathetic Ophthalmia ...	1	1	...
Episcleritis and scleritis ...	4	2	1
	182	118	9

Besides these a large number of mixed cases of what might best be called irritable eyes were similarly treated. Patients with scarred corneas, diseased lids, more or less ciliary injection, blepharospasm and lacrymation; conditions in which usual treatments are more or less tedious and unsatisfactory.

In all these cases the treatment consisted of a subconjunctival injection of 10-20 minims of a 1-4000 solution of the cyanide of mercury in sterile water.

The immediate effects differed considerably in extent and severity. Generally speaking those showing least oedema, ocular and neighbouring, were least benefited and in these a second injection achieved nothing. There was not much complaint although in some cases no cocaine was used; this, however, is not the routine nor advisable. In cases injected at the Harlem Eye and Ear Infirmary this has also been true. Applications of heat and cold, whichever preferred by patient, have been used here, but no after-treatment was called for in India. Within an hour or so all discomfort disappeared.

The results were very satisfactory. Blepharospasm and lacrymation were promptly relieved. Pain in scleritis and ulcers ceased. Those led to hospital were able to leave alone next day, so far as these symptoms were concerned. This was the cause of my awakening.

Recent corneal opacities were improved. Other remedies may have done as much in these cases, but only after much expenditure of time and attention, both impossible in India.

As a routine for chronic trachomas with pannus, if time and suffering are of moment, cyanide injections hold high place.

In chorioiditis, retinitis, neuritis and retinal detachment I have indicated, the method possessing these qualities should be valuable. The antisymphilitic value should also be considered.

In India the use of the injection was so general that there must have been included cases suitable for other treatment and no doubt some failures were due to mistaken application. The unprejudiced observer, however, was compelled to admit that no treatment could have exceeded the good results in time or simplicity,

and for the failure, the experienced clinician would be puzzled to suggest a more likely treatment. The best results were evidenced in those cases where destruction of cornea was imminent and certain, the only hope here being in an instant checking of the process. Most any method will preserve a sightless globe, the eventual scar being the true measure of success. In a large number of cases the injection marked a beginning defervescence.

While the writer does not urge any such routine treatment as he saw and as he would follow in practice in India, he does not consider subconjunctival injection of cyanide as a method of last resort. On the contrary he believes that a wise diagnosis in most of the severe cases of the above group calls at once for this treatment.

The fact is that many cases of corneal ulceration are doomed by the lax treatment instituted. On first appearance with a casual history, corneal erosions, abrasions and trauma from flying particles of stone, metal or wood, are apt to appear innocent. Cleansing and atropin are generally prescribed. When in twenty-four hours or more these patients return showing increased ulceration and hypopyon, the treatment which has proved of no avail is surely useless in continuation. An injection at this stage commonly gives brilliant results. Later it, too, is mere procrastination.

The experience was of use and may be accepted as valid in that it showed availability. There were no cases of "frightful" reaction, no "fearful" results. Untoward accidents such as necrosis, ecchymosis, injury of sclera were never observed. The apparent increase of tension was temporary, but it is difficult to be sure of its existence as a result. The tonometer should be used constantly before and after to make any statement useful.

The adhesions often mentioned are said by Indian operators to be temporary, and this was certainly true in those where examination was made ten months or a year after injections previous to proposed operation. They would seem to be unimportant in the class of eyes mentioned.

Although in a few cases the redness and oedema were more than ordinary, the symptoms belied the sensations. Experience at home has confirmed this feature.

What may be considered minor matters by the listener or observer are evidently important. It is, for instance, wise to be sure that the needle point is free between sclera and conjunctiva and not engaged in Tenon's capsule—wise therefore not to inject too near the limbus. It is best to inject only so much in one place as will make a soft bleb; if more is needed, we should use the inferior subconjunctival space. Children seem to stand stronger solutions than the aged. A warmed solution seems least painful.

The cyanide is less irritating, causes less adhesion and does not affect instruments; it is as potent and so discounts the bichloride. Whatever may be the value of salt solution in chorioidal, retinal and neural affections it is not to be compared with the cyanide in the above group.

It should be said again that these cases received no other treatment whatsoever. It is indeed a point of value that these injections obviate constant attention and personal handling, both impossible in India and great trials here.

The report of results in the cases mentioned may be dubbed as too general to be of use. May I answer that it was the number and mixed conditions which rendered the experience fruitful. The old trachomas and pannus with blinding lacrymation and spasm, the ulcers, scleritis and opacities were of the most distressing and dangerous class. They made aside from glaucoma, cataract and trichiasis the bulk of all cases presenting. The impossibility of daily attendance at clinic, the poverty, ignorance and often indifference, rendered one hopeless. A year's work in New York would not give the severe cases of a week in India. It is

only under such conditions that one grows familiar with a method of treatment. Too often widely published opinions are based on so small a knowledge that accidents of technique and mistakes in judgments take the place of physiological process and its results.

It is not necessary to become over enthusiastic, neither may one hope to try out cyanide injections in a single case. Each surgeon should test out his own usage and be governed by his own results. It is surely a sterling resource and after a careful consideration of discussions pro and con both here and abroad, in the light of my experience I must tell you that no case has been made against the remedy and that splendid results await its wise use at your hands.

THE STORAGE OF UNDERMILLED RICE AND BERI-BERI.

THE question of the storage of undermilled rice has an important bearing on the prevention of beri-beri. Braddon for sample has stated that undermilled rice if stored in a damp place loses its protective power in preventing beri-beri.

Dr. E. B. Kedder and R. R. Williams have made a series of important experiments on this matter. The conclusions which we herewith quote (*Phil. Jour. of Sci.*, June 1913), as they are of considerable practical importance:—

1. Undermilled rice may be stored for one year in a damp place without losing its protective powers against polyneuritis gallinarum. It is improbable therefore that a rice which originally affords protection against beri-beri will lose this property by storage even in damp places.

2. The neuritis-preventing substances or vitamins contained in rice polishings are only slightly soluble in cold 95 per cent. alcohol, since three successive extractions, using a total of 6 liters of alcohol to each kilogram of polishings, fail to remove all of the neuritis-preventing substances from rice polishings.

3. Strongly alkaline reagents, such as sodium hydroxide, ammonia, and barium hydroxide, destroy the neuritis-preventing vitamins in its free or unhydrolyzed state, and the use of these reagents must be avoided in endeavoring to isolate this substance.

4. Basic lead acetate does not precipitate the neuritis-preventing vitamins and a considerable portion of this substance may be recovered from the filtrate.

5. The therapeutic properties of an alcoholic extract of rice polishings are greatly altered by hydrolysis (treatment with 5 per cent. hydrochloric or sulphuric acid). The unhydrolyzed extract is not poisonous and is only slowly curative. The hydrolyzed extract is exceedingly poisonous in large doses and promptly curative in small doses.

6. We have confirmed Funk's observations by isolating a crystalline base from an extract of rice polishings by Funk's method. This base in doses of 30 milligrams promptly cured fowls suffering from polyneuritis gallinarum.

7. Funk's base or vitamins is present in rice polishings in considerable amounts, and only a very small portion of it can be obtained by Funk's method.

(1) Because the polishings themselves are incompletely extracted.

(2) The greater part of this base is lost during the chemical manipulations required by Funk's method as shown by the facts:—

(a) The curative action of this base, isolated, is from twenty-five to fifty times weaker than the curative action of the original hydrolyzed extract.

(b) When fowls are fed on polished rice and given a daily dose of this base in amounts corresponding to 10 cubic centimeters of the original extract, these fowls are not protected. Ten cubic centimeters of the original

extract or 10 grams of polishings daily are amply sufficient fully to protect fowls.

(3) Because Funk's method depends upon the use of barium hydroxide, and we have shown that this reagent destroys this base.

8. Two groups of substances (purine bases, choline-like bases) may be isolated from rice polishings in addition to Funk's base and are capable of partly or wholly protecting fowls fed on polished rice against polyneuritis gallinarum, but are incapable of curing fowls that have already developed the disease. The chemical nature of these two groups of bases requires further investigation.

9. We have confirmed the observation of Suzuki, Shimamura, and Odake, that Funk's base may be precipitated from unhydrolyzed extract by tannic acid, but did not succeed in obtaining large amounts of this substance by this method.

10. It is probable that this base or vitamine exists in food as a pyrimidine base combined as a constituent of nucleic acid, but that it is not present in the nucleins or nucleic acids that have been isolated by processes involving the use of alkalis or heat.

11. The administration of unhydrolyzed extract of rice polishings to cases of adult wet beri-beri, or to cases suffering from acute cardiac insufficiency, results in the prompt dissipation of œdema and relief of the cardiac symptoms.

12. The administration of unhydrolyzed extract of rice polishings to cases of dry beri-beri is followed by little or no improvement in the paralytic symptoms.

13. The administration of Funk's base to cases of dry beri-beri is followed by an immediate improvement in the paralytic symptoms. This should remove the last doubt that dry beri-beri is caused by the deficiency of this substance in the diet. It also finally proves that dry beri-beri of man and polyneuritis gallinarum are essentially the same disease.

14. We have succeeded in curing a case of infantile beri-beri (of the wet type) by administering that portion of the extract of rice polishings represented by the filtrate from the phosphotungstic precipitate. Since this filtrate does not contain Funk's base, this is evidence that wet beri-beri is cured by some other substance.

15. Conclusions 11, 12, 13 and 14 are striking confirmatory evidence for the hypothesis previously stated by Vedder and Clark that wet beri-beri and dry beri-beri are two distinct conditions, each being caused by the deficiency of a separate vitamine.

SPLENECTOMY FOR MALARIA.

THE removal of the spleen for the effects of malaria is an operation but rarely practised in malarial countries, but in the *Archiv. für Klinische Chirurgie* (Berlin, C. I., 3, p. 573), we find an article on this subject by Dr. N. W. Kopylow. He has removed the spleen in thirteen such cases himself and has collected the records of 187 other cases, *i.e.*, 200 in all. The mortality was 25 per cent., not very great when we consider the cachectic condition of so many of the patients. The survivors when examined from six to twelve months after the operation were found to be well and "with full earning capacity." Kopylow ventures the opinion that in malarial countries removal is desirable "as a routine measure when large painful and immovable." When the spleen has become large and also movable—it is liable, he says, to get its pedicle twisted and it should be removed on the other hand. Kopylow is wise enough to refrain from this formidable operation when the patient is cachectic and hæmoglobin below 40 per cent., or if there is

general poor health or chronic bowel complaint. The range of mortality he tells us in various clinics has varied from 7 to 60 per cent. of cases.

THE CHINA MEDICAL JOURNAL.

THE September number of this monthly is a good one.

Dr. J. L. Maxwell has an interesting note on some obscure diseases, *e.g.*, "Febrile Tropical splenomezaly"—a very common disease in China, especially those associated with ascites. It is not kala-azar.

Another disease not yet worked out is fistulous disease of the buttocks, not syphilitic, not tuberculous, but amœbæ has been found in the pus. Ratbite disease is another obscure malady.

Dr. S. Cochran has a good article on vesical calculus. He quotes the opinion of V. Cabot of Boston, who supports opinion in India in his statement that litholapaxy is the operation of choice, but in spite of this dictum surgeons who have not constant experience with stone do still cling to the suprapubic method. We quote the following useful statistics from Dr. Cochran's articles, but as he tells us he only had an opportunity of doing litholapaxy six times his opinion will not carry great weight in India, where in many districts a surgeon may easily do six operations in a week!

"This natural selection is well seen in a series of cases reported by Post of Beirut. The mortality is as follows:—

Method:—	Suprapubic.	Crushing.	Perineal.
No. of cases ...	39	137	201
Mortality ...	17.9%	5.8%	3.5%
Average weight of stone (grams) ...	28	17	5

This is a very bad showing for the suprapubic operation and in favor of the perineal. A good deal of the force of these argument is taken away by noting that the average weight of the stones runs nearly parallel with the mortality. The advantage of the perineal operation is further seen to be less when it is known that 90 per cent. of them were in children below 15 years old while 52 per cent. of the crushing operations were in old men of 50 years or more.

Watson and Cunningham have made an extensive compilation of operations for stone, collating 33,871 cases. These figures are very damaging to the suprapubic method—

Age.	Suprapubic.	Crushing.	Perineal.
1-15	7.4%	1.7%	3.3%
16-50	11.2	1.6	7.9
over 50	25.4	4.4	20.2

It would seem as if the excessive mortality of the suprapubic operation must be accounted for by the fact that in many of the different series of cases only the large stones and difficult cases were treated by this route.

Our own statistics of the suprapubic operation are much more favorable.

Age.	Suprapubic.	Combined. Suprapubic and Perineal.
1-15	139 cases, 5 deaths, 3.6%	5 cases 0 death, 0%
16-50	76 " 3 " 3.8	5 " 0 " 0
over 50	12 " 1 " 8.5	1 " 1 " 100
	227	9 3.9 11 1 9.1%

This is probably due to the fact that the cases are unselected except to a slight degree, for only 17 were done by other operations, 6 being by litholapaxy and 11 by the perineal operation."

A useful article on the "wholesale" treatment of cholera by Dr. O. T. Lagan is good. He concludes that "L. Rogers' method, hypertonic intravenous injection plus permanganate by the mouth is a simple yet efficient treatment and probably excels any other known method of cholera treatment."

We have had much to report of Relapsing fever in India of late and we note a article by Dr. H. P. Taylor on this fever in China. He states that "salvarsan" is specific and should be used in dose of 3-4 decigrams, and by the intravenous route.

In an experimental study of racial immunity Dr. H. E. Eggers gives the following tentative conclusions:—

1. The leucocytes of Chinese apparently show on the whole a somewhat greater phagocytic power toward staphylococcus than do those of Europeans. This difference is more striking when we bear in mind that for purposes of comparison in the greater part of the work specimens of European blood were used that were apparently above par in this respect.

2. The differences in antibody content in the serum were not so striking what difference there was in favor of the Europeans.

3. A comparison of total antibacterial power of the blood, that is, of leucocytic phagocytic power plus antibody content in the serum, points decidedly in favor of the Chinese, the difference in this respect being greater than in the case of either of the two factors considered separately.

TRAMBUSTI-DONZELLI SERUM IN MEDITERRANEAN FEVER.

NATALE (S.). *Riv. erit. di Clin. med.*, Florence, 1912, xii, 785.

THE author comments on the poor success with which all sorts of treatment have been applied in Mediterranean fever, which is occasionally fatal and not rarely followed by a troublesome and prolonged convalescence. Wright and also Eyre prepared anti-serums for it, but they were not effective from the point of view of cure. In 1907 Trambusti and Donzelli made a serum prepared by injecting the nucleo-proteins extracted from a highly pathogenic strain of the *B. melitensis*, and in 1908 showed that it was curative in the monkey. They treated 2 men with it successfully; Morpurgo recorded 2 other successful results (1910), and Missiroli (1911) published 4 more. Missiroli found that larger injections of the antimelitensis serum were required in cases of long standing—4 to 6 months. A few more cases in which it was used with success have been published. Natale gives an account of 3 more instances of its successful employment, in a child of 2½, a man of 28, and a woman of 20, that had each been ill with Mediterranean fever for about 3 weeks, and had evening temperatures of 102° F. or over. The treatment of the child consisted of 2 injection of 10 c.cm. of the antiserum at an interval of 24 hours; the temperature returned to the normal by lysis in 3 days, and the child returned to good health at once. The man of 28 had 3 injections

of 10 c.cm. of the antiserum at intervals of 24 hours; he sweated profusely, his temperature fell to the normal by crisis. The woman received 3 similar injections at intervals of 12 hours; the temperature fell to the normal by crisis, with profuse sweating. Natale notes that these were all cases of recent infection, supposing that the cases of many months' duration may be more difficult to cure. He lays great stress on the agglutination reaction (Widal's test) in the diagnosis of Mediterranean or Malta fever. References to the literature are given. (From *Medical Chronicle*, September 1913.)

OIL OF CHENOPODIUM IN ANKYLOSTOME INFECTION.

"DR. W. SCHUFFNER, in an article in the '*Nederlandsch Tydschrift*,' for May 17th, entitled 'Hygiene in the Tropics and the Problems Arising Therefrom,' discusses amongst other things the treatment of ankylostomiasis. He is medical officer of the Senembah Tobacco Co., which employs some 7,000 coolie labourers. According to his statistics, of this number some 5,000 labourers are annually treated for hook-worm disease. He has experimented with the various drugs recommended and he finds that ol. chenopodii anthelmintici is successful in 91 per cent of the cases, thymol in 83 per cent, naphthol in 68, and ol. eucalyptus in 38 per cent. Ol. chenopodii is readily taken on sugar, and at the same time is a specific against the various ascarides." (*Medical Jour. of S. Africa.*)

THE forthcoming Text-book on *Medical Entomology*, by Captain W. S. Patton, I.M.S., and Captain F. W. Cragg, I.M.S., will be one of great value and importance and bids fair to be the most important book on this subject yet published. It is written for the benefit of Medical Officers, Sanitarians and Veterinary Officers and all interested in the communication of diseases by anthropods to man and to domestic animals. It is beautifully got up and the special feature will be the amplitude and excellence of the illustrations. These include 36 brush drawings, 89 full page plates. The brush drawings have been done by Mrs. Patton and the line ones by Captain Cragg. It will certainly be a most useful book. It consists of 650 pages and costs one guinea.

Reviews.

The Muktesar Laboratory.—By MAJOR J. D. E. HOLMES, M.A., D.S.C., M.R.C.V.S., Imperial Bacteriologist, Calcutta: Superintendent, Government Printing, 1913.

THIS is a very interesting account of the well-known Laboratory at Muktesar, U. P., for the investigation of the diseases of stock in India. The little volume gives a history of this laboratory